AIR REGISTRATION BOARD

NOTICES TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

Issue 15.
1*st January*, 1953.

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AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 3

Issue 3.

1*st April*, 1949.

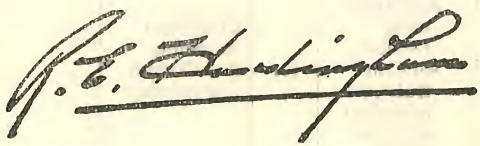
DUTIES OF AIRCRAFT ENGINEERS LICENSED IN CATEGORIES "A" AND "C"

1 The Air Navigation Regulations require that the certification of an aircraft before flight shall be made, in respect of the airframe by an aircraft engineer licensed in Category "A" and, in respect of the engine(s) by an aircraft engineer licensed in Category "C".

2 To remove any doubts regarding the division of duties when two individuals make the certification, the duties of engineers licensed in Categories "A" and "C" respectively are detailed in the attached Appendix.

3 **Cancellation** This Notice cancels Notice to Licensed Aircraft Engineers and to Owners of Civil Aircraft No. 3, Issue 2, dated 1st January, 1949, which should be destroyed.

By Order of the Board,



Secretary.

Brettenham House,
Strand,
London, W.C.2.

APPENDIX

COLUMN 1 CATEGORY "A"	COLUMN 2 CATEGORY "C"
1 The Aircraft Engineer licensed in Category "A" is required to certify all parts of the aircraft except the engine(s) and/or power plant(s) and their installations (see Column 2).	2 The Aircraft Engineer licensed in Category "C" is required to certify the engine(s) and/or power plant(s) including all parts and systems essential to their installations. *NOTE: When removal of an instrument or repair of an installation system involves the detachment of wiring or pipe lines from the airframe, or the opening up of the airframe, the work of removal and replacement should be done in collaboration with an aircraft engineer licensed in Category "A".*
1.1 **All Parts of the Airframe Structure** for Assembly, Condition and, where applicable, Functioning	2.1 **All Parts of the Power Plant(s), including :—** Engine .. for Condition, Installation and Power Output
All Connections to the Airframe Structure of items classified in this Column 1 for Security of Attachment	Engine Bearers for Condition and Security of Attachment
	Auxiliary Gear Boxes; Engine Driven Cabin Blowers; Engine Driven Generators; Engine Starting Systems; Fuel, Vacuum, Pressure and De-icing Pumps for Security of Attachment, Condition and arranging for correction of reported faults
1.2 **All Airframe Controls, including :—** All Flying Controls; All Trimming Devices; All Controls connected to the Airframe Equipment for Condition, Assembly and Correct Functioning	2.2 **All Controls connected with the Engine(s) or Power Plant(s) and their Ancillary Systems** for Security of Attachment, Condition, Assembly and Correct Functioning

COLUMN 1 (Continued)	COLUMN 2 (Continued)
1.3 All Flying Instruments and Instruments required for any particular installations* for Functioning Condition and arranging for correction of reported faults	**2.3 All Engine and/or Power Plant Instruments*** for Security of Attachment Functioning Condition and arranging for correction of reported faults
Direct Reading Compass for Condition	
Remote Reading Compass System for Condition and Functioning Checks	
1.4 Items of Equipment including :	**2.4 Propellers** for Installation Condition Smooth Running and, in the case of V.P. Propellers, Assembly and Functioning
Automatic Pilots for Functioning Checks as specified in the respective Makers Instructions	
Radio Equipment for Security of Attachment to the Airframe Structure only	
Constant Speed Units Feathering Pumps for Installation Condition and Functioning	
Hand Fire Extinguishers Safety Belts Safety Harness Seats or Bunks Towing and Tethering Gear Attachments for Condition Assembly and Functioning	
Tables Oxygen Masks Life Belts Dinghies Axes All Marine Mooring Gear for Condition and Security of Stowage	

*Any instrument or item of equipment that requires adjustment or calibration during or after installation must be certified in conjunction with an aircraft engineer licensed in Category "X" in the appropriate rating of the Category.

COLUMN 1 (Continued)	COLUMN 2 (Continued)
1.5 All Parts of Installations required for operating any of the items shown under 1.1 to 1.4 above, including :— Cockpit and Cabin Heating and Air Conditioning Systems De-icing Systems except those parts listed under 2.5 (Column2) Oxygen, Hydraulic and Pneumatic Systems Pressurization Systems Fire Prevention, Detection and Extinguishing Systems Venturi and Vacuum Systems Pitot and Static Systems All parts of Wheel Brake Operating Gear All parts of the Flap Operating Gear All parts of the Retractable Landing and Float Operating Gear All Wiring and Piping leading to any Items or Systems classified under this Column 1 **for** Condition and Functioning	**2.5 All Parts of Installations required for operating any of the above items shown under 2.1 to 2.4 above, including :—** All Fuel Systems (including Tanks) All Oil Systems (including Tanks) All Propeller, Injector and/or Carburettor De-icing Systems Heaters (Exhaust or Coolant Operated) All Engine Cowlings Fire Prevention, Detection and Extinguishing Systems All Wiring and Piping except as defined in Column 1 **for** Installation Condition and Functioning

COLUMN 1 (Continued)	COLUMN 2 (Continued)
1.6 Electrical System*	**2.6 Electrical System**
for { Condition; Continuity†; Insulation†; Functioning and arranging for correction of reported faults	All Parts pertaining to the Engine and/or Power Plant and Controls } for { Condition; Continuity; Insulation; Functioning and arranging for correction of reported faults
All Bonding Connections to the Airframe } for { Condition and Continuity	Bonding and Screening of Parts classified under this Column 2 } for { Condition and Continuity
	Ignition System } for { Condition; Functioning; Continuity and Insulation
1.7 Emergency Exits	
NOTE: When periodical opening tests of an emergency exit are necessary to ensure that it is in working order, the appropriate interval between tests is determined by the Board.	
for { Condition and Functioning	

*NOTE (i) Any instrument or item of equipment that requires adjustment or calibration during or after installation must be certified in conjunction with an aircraft engineer licensed in Category "X" in the appropriate rating of the Category.

†NOTE (ii) Applicable to Aeroplanes specified in paragraphs 5.1, 5.2 and 5.3 of the current issue of Notice to Licensed Aircraft Engineers and to Owners of Civil Aircraft No. 10. For Aeroplanes in paragraphs 5.4 and 5.5 of the Notice, certification can be made only in conjunction with an aircraft engineer licensed in the appropriate rating of Category "X".

AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 2

Issue 9.

1*st January*, 1953.

RENEWAL OF AIRCRAFT MAINTENANCE ENGINEERS' LICENCES

1 Aircraft Maintenance Engineers' licences will be renewed on application provided that, during the twenty-four months preceding the date of expiry of the licence, the holder has been engaged for periods totalling at least six months on work which comes directly or indirectly under the Board's supervision. Where these conditions have not been fulfilled, an engineer may maintain the validity of his licence by complying with the requirements for the grant of a licence.

2 The Board is anxious that there should be close liaison between its Surveyors and Aircraft Engineers, and engineers should, in their own interests, keep in close touch with the Board's Surveyor stationed nearest their place of employment. When changing their place of employment engineers should, if possible, notify the Surveyors at the Board's Office in the area which they are leaving ; they should, in any case, notify the Surveyors at the Office nearest their new place of employment. A list of the Board's Area Offices is given overleaf.

3 Engineers should note that, approximately one month before the expiry date of the licence, the Board will forward a renewal form (A.R.B. 302) to each licence holder at the last private address registered with the Board. In order to be sure of receiving the renewal form and other communications, engineers should notify changes of private address direct to the Board's Head Office.

United Kingdom

Air Registration Board,
Western Area Office, Greville House,
37 Gratton Road, Cheltenham, Glos.

Air Registration Board,
Croydon Airport, Surrey.

Air Registration Board,
Prudential Chambers, Silver Street, Doncaster.

Air Registration Board,
Elmdon Airport, Birmingham, 26.

Air Registration Board,
B.O.A.C. Western Division, Filton,
P.O. Box No. 11, Bristol, 1.

Air Registration Board,
Hatfield Aerodrome, Herts.

Air Registration Board,
County Chambers, Bath Road,
Hounslow, Middlesex.

Air Registration Board,
Hurn Airport, Nr. Christchurch, Hants.

Air Registration Board.
Liverpool Airport, Speke, Liverpool, 19.

Air Registration Board,
London Airport, Hounslow, Middlesex.

Air Registration Board,
Airport for Glasgow, Renfrew, Scotland.

Air Registration Board,
Prestwick Airport, Ayrshire.

Air Registration Board,
Southampton Airport, Hants.

Air Registration Board,
Whitchurch Airport, Bristol.

Overseas

Air Registration Board,
Civil Airport, Nicosia, Cyprus.

Air Registration Board,
c/o Director of Civil Aviation,
Kai Tak Civil Airport,
Kowloon, Hong Kong.

Air Registration Board,
Office of the Director-General of Civil Aviation,
Karachi Airport, Pakistan.

Air Registration Board,
Office of the Director of Civil Aviation, West Africa,
Lagos, Nigeria.

Air Registration Board,
Room 608, Castle Building,
St. Catherine and Stanley Streets, Montreal,
P. Quebec, Canada.

Air Registration Board,
Office of the Director of Civil Aviation,
P.O. Box 5163, Nairobi, Kenya, East Africa.

Air Registration Board,
Office of the Director of Civil Aviation,
New Law Courts Buildings,
Rangoon, Burma.

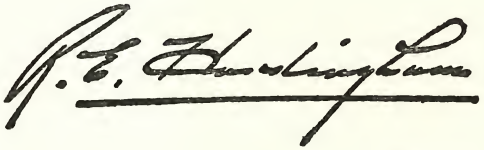
Air Registration Board,
Office of the Director of Civil Aviation,
Flugmalastjorinn, Reykjavik, Iceland.

Air Registration Board,
Directorate of Civil Aviation,
Kallang Airport, Singapore, Malaya.

Air Registration Board,
Glamorgan, Gordon Street,
Curepe, Trinidad, B.W.I.

4 **Cancellation** This Notice cancels Notice to Licensed Aircraft Engineers and to Owners of Civil Aircraft No. 2, Issue 8, dated 1st September, 1951, which should be destroyed.

By Order of the Board,



Secretary.

Brettenham House,
Strand,
London, W.C.2.

AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 41

Issue 1.
18*th March*, 1953.

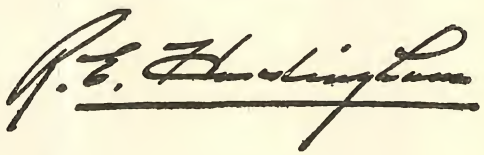
RUMBOLD SAFETY BELTS, TYPE M.192 (ISSUE 4) AND M.368 (ISSUE 3)

1 Instances have occurred of the above-mentioned belts being wrongly assembled in relation to their adjuster mechanisms. In such instances, it is possible for the belt to slip through the adjuster when a load is applied, instead of being held fast as it will be if the assembly is correct.

2 The correct method of assembling the belt in relation to the adjuster is illustrated overleaf. As early as convenient, but in any case not later than the next minor inspection, all belts of the above types must be inspected to ensure that their adjuster assemblies conform with this illustration.

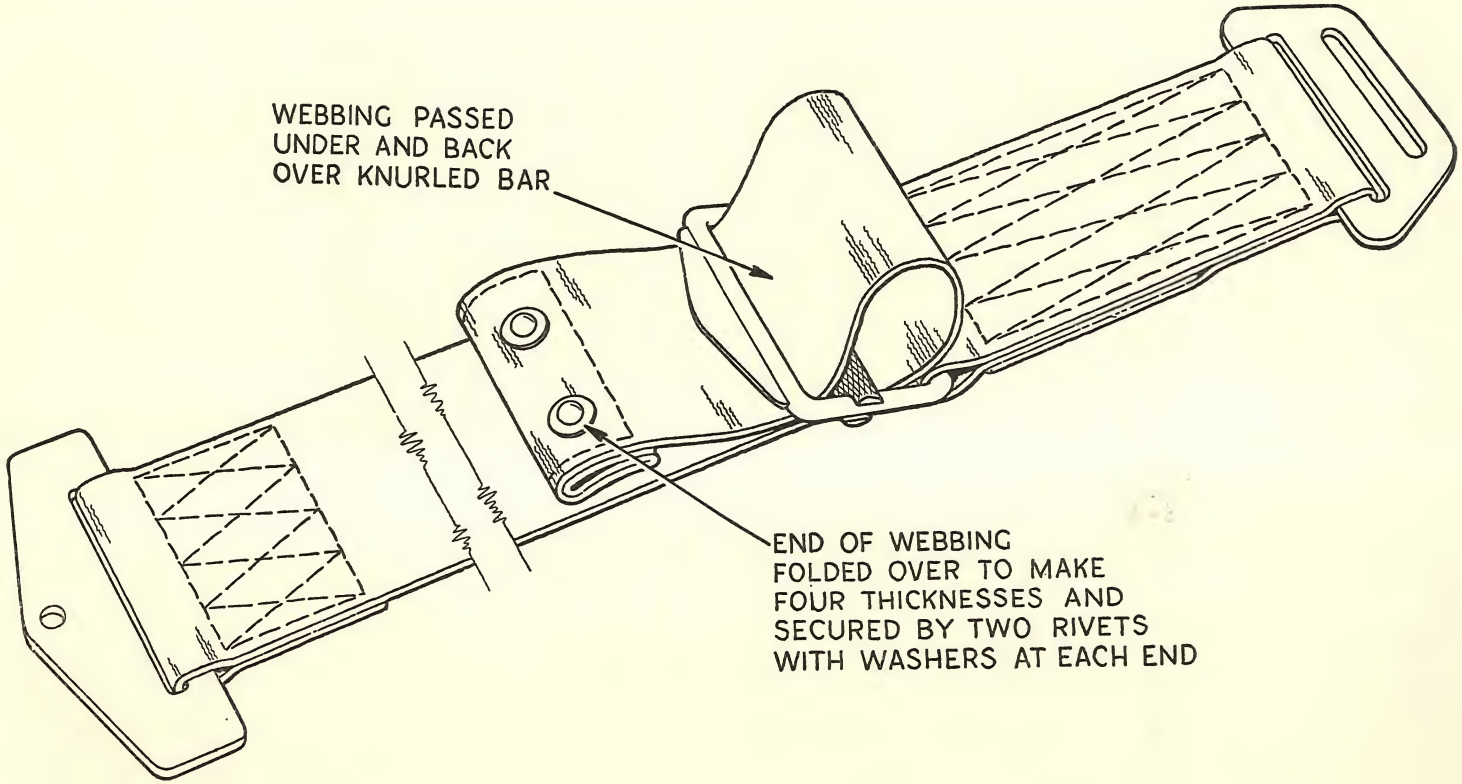
3 After ensuring that the assembly is correct, the tongue end of the belt is to be doubled over to make four thicknesses and then secured by rivets with washers at each end as illustrated ; or, as an alternative to the rivets and washers, the four thicknesses may be stitched together. This modification is intended to prevent subsequent alteration of the adjuster assembly.

By Order of the Board,



Secretary.

Brettenham House,
Strand,
London, W.C.2.


WEBBING PASSED
UNDER AND BACK
OVER KNURLED BAR
END OF WEBBING
FOLDED OVER TO MAKE
FOUR THICKNESSES AND
SECURED BY TWO RIVETS
WITH WASHERS AT EACH END

AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 1

Issue 3.
1*st September*, 1951

FOREWORD

1 General

1.1 Notices to Licensed Aircraft Engineers and to Owners of Civil Aircraft hereinafter referred to as "Notices" are published by the Air Registration Board. The Notices, the issue of which is one of the functions delegated to the Board by the Minister of Civil Aviation, are a means of circulating essential information, of an administrative or technical nature, to all licensed aircraft engineers and owners of civil aircraft.

1.2 The Air Ministry Notices to Aircraft Owners and Ground Engineers were cancelled on the 1st September, 1944, and any matters dealt with therein, which require re-publication, will be included in Notices issued by the Board.

2 Contents List

2.1 A contents list will be issued at the beginning of each year giving particulars of all Notices current as at 1st January. Recipients are advised to keep these lists up to date with manuscript alterations as soon as they receive any new or revised Notices.

2.2 In the case of an engineer or owner being issued with a set of Notices for the first time, the contents list should be amended according to the set of Notices supplied.

3 Arrangement

3.1 Each Notice is identified by a number, followed by an issue number and an issue date. This information is listed in sequence in the contents list referred to in paragraph 2.

3.2 When a procedure, which has already been the subject of a Notice, is changed, the particular Notice is re-issued under the same number but bears a new issue number and issue date. This system allows the sequence of numbering to be retained when redundant Notices are destroyed.

4 Publication and Distribution

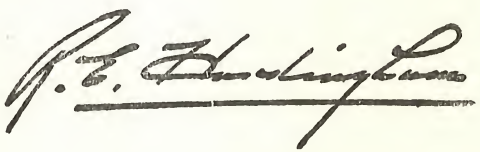
4.1 Each new licensed aircraft engineer or owner of civil aircraft will be issued, free of charge, with a set of current Notices together with a folder, and thereafter with one copy each of all revised Notices and of new Notices. The issue of revised Notices or new Notices will be notified to the aeronautical press for publication.

4.2 Persons other than licensed aircraft engineers and owners of civil aircraft may purchase Notices at the cost of 1d. each, plus postage. Such persons may be placed on the Board's mailing list by making one payment of 10s. This will include one copy of each Notice issued to date and one copy of each of those to be issued. Folders may be purchased for the additional sum of 4s. 6d. each, including postage and packing.

5 Enquiries Enquiries regarding the supply of Notices should be addressed to the Publications Department, Air Registration Board, Greville House, 37 Gratton Road, Cheltenham, Glos. All enquiries regarding the content of the Notices should, however, be addressed to the Secretary, Air Registration Board, Brettenham House, Strand, London, W.C.2.

6 Cancellation This Notice cancels Notice to Licensed Aircraft Engineers and to Owners of Civil Aircraft No. **1**, Issue 2, dated 1st January, 1948, which should be destroyed.

By order of the Board,



Secretary.

Brettenham House,
Strand,
London, W.C.2.

AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 4

Issue 11.
1*st July*, 1952.

PROPELLERS APPROVED FOR USE ON CIVIL AIRCRAFT

1 Propellers listed in the attached Appendix are approved for use on civil aircraft in respect of which there are in force certificates of airworthiness duly issued or rendered valid by the Minister of Civil Aviation.

2 For convenience, propellers are listed under types of engines, but each propeller is approved only for the specific engine-airframe combination shown.

3 Propellers manufactured after the date of this Notice to the same drawing-numbers as those given in the attached list may, in addition, bear certain issue numbers. These issue numbers are used mainly to indicate minor modifications which do not affect safety, but in some cases the intention is to indicate changes in pitch or diameter.

3.1 Where an issue number has been used to indicate a minor modification and the pitch and diameter remain the same as against the drawing-number shown in this list, it may be assumed that the propeller is approved.

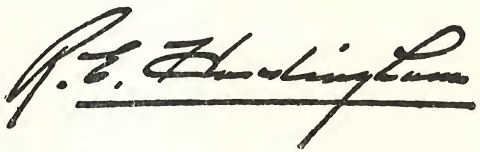
3.2 Where an issue number has been used to indicate a change in pitch or diameter and either of these differ from the figures given in the attached list, the propeller is not approved unless it actually appears in this list.

4 Before fitting a variable-pitch propeller it is essential to ensure that the basic pitch-range setting conforms with the latest setting approved for the particular engine - airframe combination.

5 If it is desired to use a propeller not included in the list, application for approval should be made in accordance with the procedure prescribed in Chapter A3-2 of British Civil Airworthiness Requirements.

6 **Cancellation** This Notice cancels Notice to Licensed Aircraft Engineers and to Owners of Civil Aircraft No. 4, Issue 10, dated 1st January, 1952, together with the Appendix attached thereto, which should be destroyed.

By Order of the Board,



Secretary.

Brettenham House,
Strand,
London, W.C.2.

APPENDIX

Drawing No.	Diam. (ft.)	Pitch (ft.)	Aircraft
CATARACT II			
LA503	7.18	5.60	B.A. Swallow II
Z304	7.40	6.40	B.A. Swallow II
Z2700	7.09	6.14	B.A. Swallow II
CATARACT III			
995	6.50	8.50	B.A. Swallow II
LA503	7.18	5.60	Klemm Swallow
Z304	7.40	6.40	B.A. Swallow II
Z2700	7.09	6.14	B.A. Swallow II
CENTAURUS 661			
CD85/466/1	16.00	VP	Ambassador
CHEETAH 9			
61271A/X3	7.50	7.10	Anson
A66365	7.50	7.10	Anson

Drawing No.	Diam. (ft.)	Pitch (ft.)	Aircraft
CHEETAH 10			
A66365/X3	7.50	7.10	Anson
A66410/X1	8.00	6.94	Consul, Oxford
A66410/X4	8.00	7.55	Consul
A66460/X1	8.00	6.94	Consul, Oxford
A66460/X4	8.00	7.55	Consul
A66691/X1	7.50	7.10	Anson
A66910/X1	8.00	6.94	Consul
B66829/X1	7.58	7.74	Consul
LA591	7.33	6.96	Oxford
LA613	7.33	6.96	Oxford
Z3931	7.33	6.96	Oxford
Z3934	7.17	7.17	Oxford
CHEETAH 15, 17 and 27			
CR30/242/1	8.25	VP	Avro XIX
CR30/242/4	8.25	VP	Avro XIX
CHEETAH 19			
61271A/X3	7.50	7.10	Anson
A66365	7.50	7.10	Anson
CIRRUS MAJOR II			
A66016/X4	7.00	4.58	Cygnet
A66290/X1	7.00	4.58	Cygnet
LA520	6.67	4.59	Cygnet
Z974/1	6.23	5.26	M.18
CIRRUS MAJOR III			
A66016/X4	7.00	4.58	Cygnet
A66290/X1	7.00	4.58	Messenger
A66290/X2	7.00	5.45	Mercury
A66290/X3	7.00	5.50	Mercury
A66290/X6	7.00	4.98	M.18
A66670/X1	6.75	4.82	Aerovan
A66697/X4	6.75	5.28	Auster J.5.E
A66697/X5	6.75	5.14	Skyjeep
A66697/X6	6.75	4.97	Auster J.5.G
HR669	6.84	3.53	Messenger
LA520	6.67	4.59	Cygnet
Z3756	6.30	5.15	Messenger
Z5620	6.50	4.33	Aerovan
Z5830	6.50	4.76	Skyjeep
Z5831	6.75	4.10	Skyjeep
Z6013	6.67	4.51	Aerovan, Blackburn B2, Messenger
Z6014	6.67	4.70	Aerovan, Messenger

Drawing No.	Diam. (ft.)	Pitch (ft.)	Aircraft
CIRRUS MINOR I			
A66580/X6	6.00	4.28	Auster V.J.4, Taylorcraft "C" and "D"
LA505	5.87	3.38	Auster V.J.4, B.A. Swallow II, Taylorcraft "C" and "D"
LA544	5.88	4.15	Mosscraft M.A.2
LA617	6.65	2.75	Taylorcraft "D"
N.209	5.87	3.38	B.A. Swallow II
Z3711	5.75	4.07	Wicko
Z8020	5.87	3.27	B.A. Swallow II, Taylorcraft "D"
Z8022	6.00	3.62	Auster V.J.4, Taylorcraft "C" and "D"
CIRRUS MINOR II			
A66580/X1	6.00	4.61	Auster V.J.1
A66580/X2	6.00	4.52	
A66619/X1	5.75	5.22	Gemini
A66619/X4	5.75	4.93	
A66859/X2	5.50	5.46	
B66883/X1	5.86	4.52	Auster V.J.1
C66631/X1	5.75	4.66	
C66897/X1	5.88	4.52	
C66914/X1	5.67	5.22	Gemini
C66934/X1	5.83	4.52	Auster V.J.1
FP400/2A-1	5.42	5.07	Gemini
FP400/2A-2			
HR702	5.75	3.97	Auster V.J.1
HR702/2	5.75	4.11	
HR724	5.42	5.07	Gemini
Z5435	5.50	4.65	
Z5641	6.00	4.04	Auster V.J.1
Z5642			
Z5646			
Z5647			
Z5701	5.50	4.78	Auster V.J.1, Gemini
Z5702	5.50	4.78	Gemini
Z5704	5.50	5.06	
Z5800	6.00	3.83	Auster V.J.1
CIVET I			
95193A/16	7.00	4.44	Cierva C.30.A
95193A/X2			
95193A/X4	7.00	4.96	
CONTINENTAL A40			
69C	5.75	2.33	Cub J.3
69D	5.75	2.10	Cub J.2
Z.5900	5.50	2.26	

Drawing No.	Diam. (ft.)	Pitch (ft.)	Aircraft
CONTINENTAL A65			
72CK/42	6.00	3.50	Cub J3-C65
72C44	6.00	3.66	
CONTINENTAL C75			
1188/3	6.33	3.48	Auster V.J.2
1188/4	6.33	3.29	
1188/5	6.00	3.29	
Z.5750	5.75	3.97	
Z.5751	6.00	3.22	
CONTINENTAL C125			
FP422	5.67	5.65	Gemini
FP422/2	5.67	5.33	
HR728			
CYCLONE 745C18BA3			
Blade 6801A-0 .. .. to 6801A-3 .. .. Hub 33E60	15.08	VP	Constellation
CYCLONE 749C18BD1			
Blade 2F17K3-24R .. or 2F17E3-24R .. Hub 23260	15.08	VP	Constellation
Blade 850-4C2-0 .. Hub C632S-A .. .. -B	15.08	VP	
CYCLONE GR1820G-102A			
Blade 6153A-18. . .. Hub 23E50	11.50	VP	D.C.3
Blade 6353A-18. . .. Hub 23E50	11.50	VP	
Blade 6493A-18. . .. Hub 33D50	11.50	VP	
DART 502A			
CR70/4-20-4/1	10.00	VP	Viscount 630
DART 504 and 505			
CR92/4-20-4/8	10.00	VP	Dart Dakota
GENET MAJOR I			
Z.214/1	6.22	4.43	Martlett
Z.214/2	6.22	4.45	

Drawing No.	Diam. (ft.)	Pitch (ft.)	Aircraft
GIPSY MAJOR I (Contd.)			
DH5234/A	6.75	5.08	DH.80A, DH.85
DH5234/B	6.75	4.95	
DH5234/D	6.75	4.80	DH.80A, DH.85, DH.87
DH5234/E	6.75	4.50	DH.85, DH.87A, DH.87B
DH5234/H	6.75	4.30	DH.87B
DH5234/J	6.75	4.40	DH.85, DH.87B
DH5250/B	6.33	5.17	DH.80A, DH.90A
LA506/3	6.50	4.35	DH.82A
LA510	6.50	5.36	Monarch, Whitney Straight
LA520	6.67	4.59	DH.90A
LA523	6.50	5.16	Wicko
LA543	7.00	4.00	Blackburn B2
LA547	6.50	5.10	Wicko
LA550	6.67	5.05	Hawk Trainer, Wicko
LA550/1	6.67	5.05	DH.85, Hawk
LA594/2	6.50	4.35	DH.82A
LA596	6.50	5.00	DH.82A, DH.84, Hawk Trainer, Messenger
LA604/A	6.50	4.58	DH.82A
LA623/2	6.84	3.53	Mercury
OP60/B	6.16	5.42	Whitney Straight
Z970	6.23	5.72	Hawk, Hawk Trainer
Z970-2	6.38	6.23	Falcon
Z971	6.23	5.26	Hawk, Monarch, Whitney Straight, Wicko
Z972	6.50	5.98	Hawk
Z973	6.23	5.50	Auster J.5.F, DH.80A, DH.82A, DH.90A, Falcon, Hawk, Hawk Trainer, Monarch, Whitney Straight
Z1510	6.36	5.20	DH.84
Z2010	6.50	5.65	Falcon, Hawk
Z2011	6.50	5.49	Hawk
Z3101	6.42	5.22	DH.90A
Z3104	6.50	5.42	
Z5890	6.50	4.49	Auster III ; V.d ; V.J.1.B ; V.J.5
ZD5220/1	6.33	4.83	DH.82A
GIPSY MAJOR IC			
66875/X4	6.50	5.84	Gemini
94103A/X13	6.75	4.92	Chipmunk
Z973	6.23	5.50	Gemini
Z5620/2	6.50	4.33	Messenger
GIPSY MAJOR ID			
A66696/X1	6.75	4.83	Messenger
HR671	6.84	3.53	
LA596	6.50	5.00	
Z971	6.23	5.26	

Drawing No.	Diam. (ft.)	Pitch (ft.)	Aircraft
GIPSY MAJOR ID (Contd.)			
Z5620/2	6.50	4.33	Messenger
Z5623	6.50	4.30	
Z8010	6.84	3.53	
GIPSY MAJOR IIA			
PD77/211/1	7.00	VP	Mercury
GIPSY MAJOR 10			
94103A/X11	6.75	5.34	Chipmunk
A66578/X1	6.75	4.64	DH.85
A66661/X2	6.75	5.01	Chipmunk
A66661/X3	6.75	4.71	
A66696/X3	6.75	4.67	Chrislea Super Ace
A66753/X1	6.75	5.01	Chipmunk
A66875/X1	6.50	5.72	Gemini
A66875/X3	6.50	6.02	
A66875/X4	6.50	5.84	
A66875/X7	6.50	6.22	
HR671	6.84	3.53	Chrislea Super Ace
HR708	6.33	4.33	
LA596	6.50	5.00	Gemini
Z971	6.23	5.26	Messenger
Z973	6.23	5.50	Gemini
Z5623/1	6.50	4.30	Messenger
Z5672	6.25	4.44	
Z5780	6.50	4.05	Chrislea Super Ace
Z8010	6.84	3.53	
GIPSY MINOR			
DH5258/A	5.88	3.96	DH.94
DH5258/E	5.88	4.19	
DH5258/J	5.88	4.03	
DH5258/K	5.88	4.00	
GIPSY QUEEN II			
PD30/211/1	7.00	VP	Proctor I, II, III, IV, V
PD69/211/1	7.50	VP	"Q"6
GIPSY QUEEN III			
61186A/X4	7.00	6.48	DH.89, DH.89A
61186A/X6	7.00	6.33	
61186A/X9	7.00	5.94	
61186A/X12	7.00	6.41	
61267A/X2	7.00	6.66	Heck
A66327/X2	6.75	5.90	DH.89, DH.89A
C66936/X1	6.83	5.94	
C66937/X1			

Drawing No.	Diam. (ft.)	Pitch (ft.)	Aircraft
GIPSY SIX I (Contd.)			
DH5238/H	6.75	6.40	DH.89, DH.89A
DH5238/J	6.75	6.20	
DH5244/A	6.75	6.40	
DH5244/B	6.75	6.30	
DH5246/B	6.75	6.20	DH.86, DH.89, DH.89A
Z1800	6.92	6.20	Hawk
Z2192	6.75	6.18	DH.89, DH.89A
Z2682/1	6.72	6.20	DH.86, DH.89, DH.89A
Z2682/7	6.56	6.18	DH.89, DH.89A
Z2687	6.56	6.43	DH.86, DH.86B
Z2688	6.56	6.29	DH.89, DH.89A
Z2689	6.56	6.50	DH.86, DH.86B
GIPSY SIX II			
Blade P.51156/A Hub P.2-1-0-1	7.00	VP	Nighthawk, Vega Gull
PD30/211/1	7.00	VP	Nighthawk, Proctor I, II, III, IV, V, Vega Gull
PD69/211/1	7.50	VP	"Q"6
PD76/211/1	7.00	VP	Vega Gull
PD111/211/1	7.00	VP	Nighthawk
PD120/211/1	7.00	VP	Vega Gull
PD154/211/1	6.75	VP	Mew Gull
HERCULES 100			
CD35/356/2	13.00	VP	Halton
PD35/356/1 PD52/356/1	13.00	VP	Halifax C.VIII, Halton
HERCULES 630-639 Inclusive			
CD80/446/1 CD80/446/2 CD80/446/3 CD80/446/4	12.25	VP	Solent
CR39/456/1	13.25	VP	Bristol 170 Mk. 1, 2, 11
CR41/4B6/16 CR44/456/2 CR44/456/4 CR44/456/12	13.25	VP	Viking

Drawing No.	Diam. (ft.)	Pitch (ft.)	Aircraft
HERCULES 630-639 Inclusive (Contd.)			
CR67/456/2	13.25	VP	Bristol 170 Mk. 1, 2, 11
CR67/456/4			
PD31/446/1			
PD43/446/1			
PD43/446/2			
PD43/446/3			
PD97/446/1	13.25	VP	Viking
PD97/446/2			
PD98/446/1			
PD98/446/2			
PD108/446/1	12.25	VP	Solent
PD108/446/2			
PD129/446/1	13.25	VP	Bristol 170 Mk. 1, 2, 11
PD129/446/2			
HERCULES 672 and 673			
CR77/456/8	14.00	VP	Bristol 170 Mk. 21
PD96/446/1			
PD96/446/2			
HERCULES 734 and 735			
PD122/446/1	14.00	VP	Bristol 170 Mk. 31
PD122/446/2			
HERCULES 763 and 763V			
CD94/446/1	13.00	VP	Hermes 4
CD94/446/2			
CD133/446/1			
CD133/446/2			
J.A.P. J.99			
6628	5.50	2.33	Aeronca 100
LA10			
Z5280	5.33	2.39	Motor Tutor 29B
LEONIDES 501 and 502			
PD81/313/1	9.00	VP	Prince
PD81/313/2			

Drawing No.	Diam. (ft.)	Pitch (ft.)	Aircraft
LEONIDES 501 and 502 (Contd.)			
PD134/313/1	9.00	VP	Prince
PD134/313/2			
PD158/313/1			
PD159/313/1			
LYCOMING O-235			
76RM44	6.33	3.66	Super Cruiser
LYCOMING O-290-3			
Z5594	6.00	3.67	Auster IV and V
Z5600/2	6.50	3.48	
Z5602	6.50	3.19	
LYCOMING O-435-A			
FP413	6.33	4.84	Aerovan
HR731			
LYCOMING R680			
Blade 6135A-6	8.50	VP	Reliant
Hub 2B20			
LYNX IV C			
Y759/11	8.25	5.48	Tutor
MERLIN 55M			
R26/4F5/9	10.41	VP	Spitfire VB
MERLIN 66			
R12/4F5/4	10.75	VP	Spitfire T.8
MERLIN T24-2 ; 500 ; or 502			
CA5/148.	13.00	VP	Lancastrian, York
CA5/159.			
CA5/172.			
CA5/173.			
CA5/186.			
PA5/148			
PA5/159			
PA5/172			
PA5/173			
MERLIN 621 and 623			
CD78/445/1	13.00	VP	Tudor
CD78/445/2			
CD79/445/1			
CD79/445/2			
CD88/445/1			
CD89/445/1			

Drawing No.	Diam. (ft.)	Pitch (ft.)	Aircraft
MERLIN 621 and 623 (Contd.)			
PD78/445/1	13.00	VP	Tudor
PD88/445/1			
PD95/445/1			
MERLIN 626 and 724			
Blade 6845A-0	13.08	VP	Canadair C.4
Hub 43D50			
MONGOOSE IIIC			
B240	7.25	5.46	Tomtit
Y689/6	7.50	4.75	
Z5881	7.25	5.29	
Z5882	7.75	5.00	
NIAGARA II			
LA503	7.18	5.60	B.A. Swallow II
Z304	7.40	6.40	
Z1947	6.67	7.48	Scion Junior
Z2310/2	7.38	6.78	
Z2700	7.09	6.14	B.A. Swallow II
NIAGARA III			
LA503	7.18	5.60	B.A. Swallow II
Z2700	7.09	6.14	
Z5740	6.50	8.26	Comper Swift
PEGASUS VI			
228928/H/3	10.00	8.00	Walrus I
PEGASUS 38 and 48			
C5/46A	12.75	VP	Sandringham I, Sunderland III
C5/47			
P5/48			
PERSEUS XVI			
Blade P455253A-25 ..	12.75	VP	DH.95
Hub PX502			
POBJOY R			
995/2/A	6.50	8.50	Comper Swift
Z271/1	6.50	8.52	
Z690	6.43	7.71	
Z5740	6.50	8.26	
PRAGA B			
15242/1	5.25	3.28	Hillson Praga
LA565	5.00	3.24	

Drawing No.	Diam. (ft.)	Pitch (ft.)	Aircraft
TWIN WASP S1C3G (R-1830-92)			
Blade 6153A-18 ..			
Hub 23E50-233 ..	11.50	VP	
-391 ..			
Blade 6353A-18 ..			
Hub 23E50-287 ..	11.50	VP	Douglas C.47 (Dakota II and III)
-473 ..			
Blade 6477A-0 ..			
Hub 23E50-473 ..	11.50	VP	
-505 ..			
TWIN WASP S3C4G (R1830-90C ; 90D)			
Blade 6353A-18 ..			
Hub 23E50-287 ..	11.50	VP	
-473 ..			Douglas C.47 (Dakota IV)
Blade 6477A-0 ..	11.50	VP	
Hub 23E50-473 ..			
CA5/158.	12.00	VP	Sandringham V, VII
CA5/158D			
WALTER MIKRON II			
A66049/1X1	4.75	3.59	Tipsy Trainer
A66167/X4	5.50	3.44	
A66167/X5	5.50	3.90	Tipsy B
B66592/X1	5.25	3.56	
LA511	5.05	3.92	Tipsy Trainer
LA553/2	5.35	3.22	
WARNER SUPER SCARAB 165			
86/CA/69	7.16	5.75	
LA527	7.00	5.20	Fairchild F.24W
Z8040	6.66	5.56	
WASP JUNIOR R985			
Blade 6167A-15. . ..	8.25	VP	Expediter, Lockheed 12A, Traveller
Hub 2D-30-235 ..			
Blade 6095A-6	9.00	VP	Lockheed 12A
Hub 2D-30			
Blade 6101A-18. . ..	8.50	VP	Beaver
Hub 2D30-237 ..			
WASP MAJOR TSB3-G			
Blade 2J17B3-8W ..	16.50	VP	
Hub 24260			Boeing 377
Blade 1052-20C4-30 ..	16.66	VP	
Hub C644S-B302 ..			

AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 4

Issue 12.
1*st January*, 1953.

PROPELLERS APPROVED FOR USE ON CIVIL AIRCRAFT

1 Propellers listed in the attached Appendix are approved for use on civil aircraft in respect of which there are in force certificates of airworthiness duly issued or rendered valid by the Minister of Civil Aviation.

2 For convenience, propellers are listed under types of engines, but each propeller is approved only for the specific engine-airframe combination shown.

3 Propellers manufactured after the date of this Notice to the same drawing-numbers as those given in the attached list may, in addition, bear certain issue numbers. These issue numbers are used mainly to indicate minor modifications which do not affect safety, but in some cases the intention is to indicate changes in pitch or diameter.

3.1 Where an issue number has been used to indicate a minor modification and the pitch and diameter remain the same as against the drawing-number shown in this list, it may be assumed that the propeller is approved.

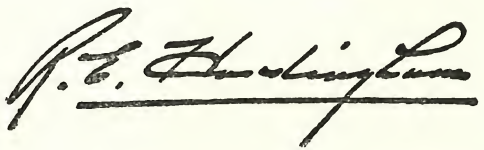
3.2 Where an issue number has been used to indicate a change in pitch or diameter and either of these differ from the figures given in the attached list, the propeller is not approved unless it actually appears in this list.

4 Before fitting a variable-pitch propeller it is essential to ensure that the basic pitch-range setting conforms with the latest setting approved for the particular engine - airframe combination.

5 If it is desired to use a propeller not included in the list, application for approval should be made in accordance with the procedure prescribed in Chapter A3-2 of British Civil Airworthiness Requirements.

6 **Cancellation** This Notice cancels Notice to Licensed Aircraft Engineers and to Owners of Civil Aircraft No. **4,** Issue 11, dated 1st July, 1952, together with the Appendix attached thereto, which should be destroyed.

By Order of the Board,



Secretary.

Brettenham House,
Strand,
London, W.C.2.

APPENDIX

Drawing No.	Diam. (ft.)	Pitch (ft.)	Aircraft
CATARACT II			
LA503	7.18	5.60	B.A. Swallow II
Z304	7.40	6.40	
Z2700	7.09	6.14	
CATARACT III			
995	6.50	8.50	B.A. Swallow II
LA503	7.18	5.60	Klemm Swallow
Z304	7.40	6.40	B.A. Swallow II
Z2700	7.09	6.14	
CENTAURUS 661			
CD85/466/1	16.00	VP	Ambassador
CHEETAH 9			
61271A/X3	7.50	7.10	Anson
A66365			

Drawing No.	Diam. (ft.)	Pitch (ft.)	Aircraft
CHEETAH 10			
A66365/X3	7.50	7.10	Anson
A66410/X1	8.00	6.94	Consul, Oxford
A66410/X4	8.00	7.55	Consul
A66460/X1	8.00	6.94	Consul, Oxford
A66460/X4	8.00	7.55	Consul
A66691/X1	7.50	7.10	Anson
A66910/X1	8.00	6.94	Consul
B66829/X1	7.58	7.74	Consul
LA591	7.33	6.96	Oxford
LA613	7.33	6.96	Oxford
Z3931	7.33	6.96	Oxford
Z3934	7.17	7.17	Oxford
CHEETAH 15, 17 and 27			
CR30/242/1	8.25	VP	Avro XIX
CR30/242/4	8.25	VP	Avro XIX
CHEETAH 19			
61271A/X3	7.50	7.10	Anson
A66365	7.50	7.10	Anson
CIRRUS MAJOR II			
A66016/X4	7.00	4.58	Cygnet
A66290/X1	7.00	4.58	Cygnet
LA520	6.67	4.59	Cygnet
Z974/1	6.23	5.26	M.18
CIRRUS MAJOR III			
A66016/X4	7.00	4.58	Cygnet
A66290/X1	7.00	4.58	Messenger
A66290/X2	7.00	5.45	Mercury
A66290/X3	7.00	5.50	Mercury
A66290/X6	7.00	4.98	M.18
A66670/X1	6.75	4.82	Aerovan
A66697/X4	6.75	5.28	Auster J.5.E
A66697/X5	6.75	5.14	Skyjeep
A66697/X6	6.75	4.97	Auster J.5.G
B67869/X1	6.96	4.58	Messenger
HR669	6.84	3.53	Messenger
LA520	6.67	4.59	Cygnet
Z3756	6.30	5.15	Messenger
Z5620	6.50	4.33	Aerovan
Z5830	6.50	4.76	Skyjeep
Z5831	6.75	4.10	Skyjeep
Z6013	6.67	4.51	Aerovan, Blackburn B2, Messenger
Z6014	6.67	4.70	Aerovan, Messenger

Drawing No.	Diam. (ft.)	Pitch (ft.)	Aircraft
CIRRUS MINOR I			
A66580/X6	6.00	4.28	Auster V.J.4, Taylorcraft "C" and "D"
LA505	5.87	3.38	Auster V.J.4, B.A. Swallow II, Taylorcraft "C" and "D"
LA544	5.88	4.15	Mosscraft M.A.2
LA617	6.65	2.75	Taylorcraft "D"
N.209	5.87	3.38	B.A. Swallow II
Z3711	5.75	4.07	Wicko
Z8020	5.87	3.27	B.A. Swallow II, Taylorcraft "D"
Z8022	6.00	3.62	Auster V.J.4, Taylorcraft "C" and "D"
CIRRUS MINOR II			
A66580/X1	6.00	4.61	Auster V.J.1
A66580/X2	6.00	4.52	
A66619/X1	5.75	5.22	Gemini
A66619/X4	5.75	4.93	
A66859/X2	5.50	5.46	
B66883/X1	5.86	4.52	Auster V.J.1
B67858/X2	5.75	4.79	
C66631/X1	5.75	4.66	
C66897/X1	5.88	4.52	
C66914/X1	5.67	5.22	Gemini
C66934/X1	5.83	4.52	Auster V.J.1
FP400/2A-1 and -2	5.42	5.07	Gemini
HR702	5.75	3.97	Auster V.J.1
HR702/2	5.75	4.11	
HR724	5.42	5.07	Gemini
Z5435	5.50	4.65	
Z5641	6.00	4.04	Auster V.J.1
Z5642			
Z5646			
Z5647			
Z5701	5.50	4.78	Auster V.J.1, Gemini
Z5702	5.50	4.78	Gemini
Z5704	5.50	5.06	
Z5800	6.00	3.83	Auster V.J.1
CIVET I			
95193A/16	7.00	4.44	Cierva C.30.A
95193A/X2			
95193A/X4	7.00	4.96	
CONTINENTAL A40			
69C	5.75	2.33	Cub J.3
69D	5.75	2.10	Cub J.2
Z.5900	5.50	2.26	

Drawing No.	Diam. (ft.)	Pitch (ft.)	Aircraft
CONTINENTAL A65			
72CK/42	6.00	3.50	Cub J3-C65
72C44	6.00	3.66	
CONTINENTAL C75			
1188/3	6.33	3.48	Auster V.J.2
1188/4	6.33	3.29	
1188/5	6.00	3.29	
Z.5750	5.75	3.97	
Z.5751	6.00	3.22	
CONTINENTAL C125			
FP422	5.67	5.65	Gemini
FP422/2	5.67	5.33	
HR728			
CYCLONE 745C18BA3			
Blade 6801A-0 .. .. to 6801A-3	15.08	VP	Constellation
Hub 33E60			
CYCLONE 749C18BD1			
Blade 2F17K3-24R .. or 2F17E3-24R ..	15.08	VP	Constellation
Hub 23260			
Blade 850-4C2-0 ..			
Hub C632S-A .. .. -B	15.08	VP	
CYCLONE GR1820G-102A			
Blade 6153A-18. . ..	11.50	VP	D.C.3
Hub 23E50			
Blade 6353A-18. . ..	11.50	VP	
Hub 23E50			
Blade 6493A-18. . ..	11.50	VP	
Hub 33D50			
DART 502A			
CR70/4-20-4/1	10.00	VP	Viscount 630
DART 504 and 505			
CR92/4-20-4/8 ..	10.00	VP	Dart Dakota, Viscount 700 and 701
GENET MAJOR I			
Z.214/1	6.22	4.43	Martlett
Z.214/2	6.22	4.45	

Drawing No.	Diam. (ft.)	Pitch (ft.)	Aircraft
GIPSY I			
DH5180/5	6.33	5.08	DH.60G
GIPSY II			
DH5180/14	6.33	5.00	DH.60G, Avian
DH5220/P	6.33	4.58	Avian
GIPSY III			
67104A/X2	7.00	5.10	DH.80A
67104A/X12	7.00	5.18	DH.80A
DH5212/D	6.17	5.42	DH.80A
DH5218/C	6.50	5.16	DH.80A
E860/1	6.87	4.26	Blackburn B2
LA520	6.67	4.59	DH.80A
LA543	7.00	4.00	Blackburn B2
GIPSY MAJOR (AUSTER III)			
DH5220/P25	6.33	4.58	Auster III
LA596	6.50	5.00	Auster V.c
GIPSY MAJOR (High Compression)			
61187A/X1	6.75	5.50	Sparrowhawk
61187A/X4	6.75	5.83	Hawk
61187A/X6	6.75	6.29	Sparrowhawk
61187A/X7	6.75	6.10	Hawk, Sparrowhawk
61187A/X8	6.75	6.19	Sparrowhawk
GIPSY MAJOR I			
5220/K/13	6.40	5.00	Moth Major
5220/X/6	6.33	4.92	Club Cadet
5232/A/1	6.50	5.10	DH.83
61187A/X1	6.75	5.50	Hawk, Hawk Trainer, Whitney Straight
61187A/X3	6.75	5.80	Hawk
61187A/X5	6.75	5.77	Hawk
61187A/X9	6.75	5.24	Falcon, Hawk, Monarch
61187A/X11	6.75	5.18	Hawk Trainer
61189A/X5	7.00	6.96	Hawk
61326A/X1	6.17	5.92	DH.85, Hawk, Whitney Straight
61326A/X2	6.17	5.56	Hawk, Whitney Straight
61326A/X4	6.17	6.58	DH.85
61326A/X6	6.17	6.27	Hawk
61326A/X8	6.17	6.01	DH.85, Whitney Straight
61326A/X9	6.17	5.72	Monarch, Whitney Straight
61326A/X10	6.17	5.85	Whitney Straight
61456A/X2	6.75	5.77	Hawk
61987C/X1	6.50	5.77	Hawk
67104A/X2	7.00	5.10	DH.80A, DH.83, DH.85

Drawing No.	Diam. (ft.)	Pitch (ft.)	Aircraft
GIPSY MAJOR I (Contd.)			
67104A/X3	7.00	4.95	DH.87B
67104A/X4	7.00	4.77	DH.82A, DH.83, DH.85, DH.87B
67104A/X6	7.00	5.33	DH.80A, DH.83, DH.85
67104A/X7	7.00	4.71	DH.87B
67104A/X10	7.00	4.60	DH.82A, DH.83, DH.85, DH.87B
67104A/X11	7.00	5.52	DH.85
67104A/X12	7.00	5.18	DH.85, DH.87B
67104A/X13	7.00	5.40	DH.85
67104A/X14	7.00	4.52	DH.82A, DH.83, DH.85
67104A/X15	7.00	5.01	DH.85
67575A/X1	7.00	4.71	DH.82A
84723A/X1	7.00	4.84	DH.82A, DH.87B
A66016/X1	7.00	5.58	Cygnet
A66016/X2	7.00	5.24	Cygnet
A66016/X4	7.00	4.58	Cygnet, DH.82A
A66696/X1	6.75	4.83	Auster V.J.1.B ; V.J.5 ; J.5.B ; J.5.F
A66696/X3	6.75	4.67	Auster V.J.1.B ; V.J.5 ; J.5.B
A66772/X2	6.50	5.00	Auster J.5.B
A66860/X1	6.50	5.66	Auster V.c
A66911/X3	6.00	5.77	Hawk Trainer, Auster J.5.F
A66938/X2	7.50	3.52	DH.82A
B66131/X1	5.92	5.92	Monarch
B66143/X1	6.74	5.49	DH.85
B66980/X1	6.58	5.24	Falcon, Hawk, Monarch
BA211/2	6.18	5.41	Hawk, Whitney Straight
C66969/X1	5.92	4.50	DH.82A, DH.87B
DH5212/A	6.17	5.25	DH.90A
DH5212/C	6.17	5.17	DH.84
DH5212/D	6.17	5.42	Whitney Straight, DH.80A, DH.82A, DH.84, DH.90A
DH5212/G	6.17	5.14	DH.84
DH5218/B	6.50	5.10	DH.80A, DH.82A, DH.84
DH5220/B	6.33	5.08	DH82A
DH5220/G	6.33	4.58	DH.82A, DH.83
DH5220/H	6.33	4.92	DH.82A, DH.83, DH.84
DH5220/L	6.33	4.75	DH.82A
DH5220/M	6.33	4.50	DH.82A
DH5220/P	6.33	4.58	Auster V.d ; V.J.1.B ; V.J.5 ; J.5.A ; DH.60G ; DH.82A
DH5228/A	6.00	5.25	DH.84
DH5228/B	6.00	5.12	DH.84
DH5232/A	6.50	5.10	DH.80A, DH.82A, DH.83, DH.84, DH.85
DH5232/B	6.50	5.30	DH.82A, DH.83, DH.84, DH.85
DH5234/A	6.75	5.08	DH.80A, DH.85
DH5234/B	6.75	4.95	DH.80A, DH.85

Drawing No.	Diam. (ft.)	Pitch (ft.)	Aircraft
GIPSY MAJOR I (Contd.)			
DH5234/D	6.75	4.80	DH.80A, DH.85, DH.87
DH5234/E	6.75	4.50	DH.85, DH.87A, DH.87B
DH5234/H	6.75	4.30	DH.87B
DH5234/J	6.75	4.40	DH.85, DH.87B
DH5250/B	6.33	5.17	DH.80A, DH.90A
LA506/3	6.50	4.35	DH.82A
LA510	6.50	5.36	Monarch, Whitney Straight
LA520	6.67	4.59	DH.90A
LA523	6.50	5.16	Wicko
LA543	7.00	4.00	Blackburn B2
LA547	6.50	5.10	Wicko
LA550	6.67	5.05	Hawk Trainer, Wicko
LA550/1	6.67	5.05	DH.85, Hawk
LA594/2	6.50	4.35	DH.82A
LA596	6.50	5.00	DH.82A, DH.84, Hawk Trainer, Messenger
LA604/A	6.50	4.58	DH.82A
LA623/2	6.84	3.53	Mercury
OP60/B	6.16	5.42	Whitney Straight
Z970	6.23	5.72	Hawk, Hawk Trainer
Z970-2	6.38	6.23	Falcon
Z971	6.23	5.26	Hawk, Monarch, Whitney Straight, Wicko
Z972	6.50	5.98	Hawk
Z973	6.23	5.50	Auster J.5.F, DH.80A, DH.82A, DH.90A, Falcon, Hawk, Hawk Trainer, Monarch, Whitney Straight
Z1510	6.36	5.20	DH.84
Z2010	6.50	5.65	Falcon, Hawk
Z2011	6.50	5.49	Hawk
Z3101	6.42	5.22	DH.90A
Z3104	6.50	5.42	DH.90A
Z5890	6.50	4.49	Auster III ; V.d ; V.J.1.B ; V.J.5
ZD5220/1	6.33	4.83	DH.82A
GIPSY MAJOR IC			
66875/X4	6.50	5.84	Gemini
94103A/X13	6.75	4.92	Chipmunk
Z973	6.23	5.50	Gemini
Z5620/2	6.50	4.33	Messenger
GIPSY MAJOR ID			
A66696/X1	6.75	4.83	Messenger
HR671	6.84	3.53	Messenger
LA596	6.50	5.00	Messenger
Z971	6.23	5.26	Messenger
Z973	6.23	5.50	DH.90A

Drawing No.	Diam. (ft.)	Pitch (ft.)	Aircraft
GIPSY MAJOR ID (Contd.)			
Z5620/2	6.50	4.33	Messenger
Z5623	6.50	4.30	Messenger
Z8010	6.84	3.53	Messenger
GIPSY MAJOR IIA			
PD77/211/1	7.00	VP	Mercury
GIPSY MAJOR 10			
94103A/X11	6.75	5.34	Chipmunk
A66578/X1	6.75	4.64	DH.85
A66661/X2	6.75	5.01	Chipmunk
A66661/X3	6.75	4.71	Chipmunk
A66696/X3	6.75	4.67	Chrislea Super Ace
A66753/X1	6.75	5.01	Chipmunk
A66875/X1	6.50	5.72	Gemini
A66875/X3	6.50	6.02	Gemini
A66875/X4	6.50	5.84	Gemini
A66875/X7	6.50	6.22	Gemini
HR671	6.84	3.53	Chrislea Super Ace
HR708	6.33	4.33	Chrislea Super Ace
LA596	6.50	5.00	Gemini
Z971	6.23	5.26	Messenger
Z973	6.23	5.50	Gemini
Z5623/1	6.50	4.30	Messenger
Z5672	6.25	4.44	Messenger
Z5780	6.50	4.05	Chrislea Super Ace
Z8010	6.84	3.53	Chrislea Super Ace
GIPSY MINOR			
DH5258/A	5.88	3.96	DH.94
DH5258/E	5.88	4.19	DH.94
DH5258/J	5.88	4.03	DH.94
DH5258/K	5.88	4.00	DH.94
GIPSY QUEEN II			
PD30/211/1	7.00	VP	Proctor I, II, III, IV, V
PD69/211/1	7.50	VP	"Q"6
GIPSY QUEEN III			
61186A/X4	7.00	6.48	DH.89, DH.89A
61186A/X6	7.00	6.33	DH.89, DH.89A
61186A/X9	7.00	5.94	DH.89, DH.89A
61186A/X12	7.00	6.41	DH.89, DH.89A
61267A/X2	7.00	6.66	Heck
A66327/X2	6.75	5.90	DH.89, DH.89A
B66936/X1	6.83	5.94	DH.89, DH.89A
B66937/X1	6.83	5.94	DH.89, DH.89A

Drawing No.	Diam. (ft.)	Pitch (ft.)	Aircraft
GIPSY QUEEN III (M.V.P.)			
PD65/2WS/1	7.00	VP	DH.89
GIPSY QUEEN 30-3 and 30 Mk. 2			
PD136/212/1	7.00	VP	Heron
GIPSY QUEEN 70, 70-2, 70-3 and 70-4			
PD25/312/1 to /4 inc. ..	7.50	VP	DH.104
PD36/312/1 to /4 inc. ..			
PD37/312/1 and /2 ..	7.50	VP	DH.104, Sealand
PD38/312/1 and /2 ..			
PD82/312/1 and /2 ..	7.50	VP	Sealand
PD83/312/1 and /2 ..	7.50	VP	Marathon, Sealand
PD103/312/1 and /2 ..	7.50	VP	Sealand
PD106/312/1 and /2 ..	7.50	VP	DH.104
PD107/312/1 and /2 ..			
PD116/312/1 to /7 inc. ..	7.50	VP	DH.104, Marathon
PD126/312/1 and /2 ..	7.50	VP	DH.104, Sealand
GIPSY QUEEN 70 Mk. 2			
PD137/312/1 to /6 inc. ..	7.50	VP	DH.104
PD139/312/1 and /2 ..			
PD143/312/1 to /7 inc. ..			
PD147/312/1 and /2 ..			
GIPSY SIX I			
61025A/X2	7.00	6.47	DH.86, DH.89, DH.89A
61025A/X3	7.00	6.29	DH.89, DH.89A
61025A/X5	7.00	6.03	
61186A/X2	7.00	6.66	DH.86, DH.86B, DH.89, DH.89A
61186A/X3	7.00	6.56	DH.89, DH.89A
61186A/X4	7.00	6.48	
61186A/X5	7.00	6.39	
61186A/X6	7.00	6.33	DH.86, DH.86B, DH.89, DH.89A, Vega Gull
61186A/X7	7.00	6.28	DH.89, DH.89A
61186A/X9	7.00	5.94	DH.89A
61186A/X12	7.00	6.41	
61189A/X1	7.00	7.11	Hawk
61189A/X3	7.00	6.87	Falcon
61189A/X5	7.00	6.96	Hawk
61189A/X6	7.00	6.65	Falcon

Drawing No.	Diam. (ft.)	Pitch (ft.)	Aircraft
GIPSY SIX I (Contd.)			
61189A/X7	7.00	6.84	Hawk
61189A/X8	7.00	7.29	
61203A/X1	7.00	7.07	Heck
61203A/X3	7.00	6.30	
61267A/X4	7.00	6.66	
61267A/X5	7.00	6.37	
61375A/X1	7.00	6.76	Gull, Vega Gull
61375A/X2	7.00	7.03	Hawk
61375A/X5	7.00	6.59	Vega Gull
61375A/X6	7.00	6.50	
61375A/X7	7.00	6.35	
61375A/X10	7.00	6.94	
A66327/X2	6.75	5.90	DH.89A
B66128/X1	6.75	6.75	DH.89, DH.89A
C66026/X1	6.67	6.81	
C66093/X1	6.75	6.66	DH.86 B, DH.89, DH.89A
DH5238/F	6.75	6.30	DH.86, DH.89, DH.89A
DH5238/G	6.75	6.40	DH.86, DH.89, DH.89A, Heck
DH5238/H	6.75	6.40	DH.89, DH.89A
DH5238/J	6.75	6.20	
DH5244/A	6.75	6.40	
DH5244/B	6.75	6.30	
DH5246/B	6.75	6.20	DH.86, DH.89, DH.89A
Z1800	6.92	6.20	Hawk
Z2192	6.75	6.18	DH.89, DH.89A
Z2682/1	6.72	6.20	DH.86, DH.89, DH.89A
Z2682/7	6.56	6.18	DH.89, DH.89A
Z2687	6.56	6.43	DH.86, DH.86B
Z2688	6.56	6.29	DH.89, DH.89A
Z2689	6.56	6.50	DH.86, DH.86B
GIPSY SIX II			
Blade P.51156/A Hub P.2-1-0-1	7.00	VP	Nighthawk, Vega Gull
PD30/211/1	7.00	VP	Nighthawk, Proctor I, II, III, IV, V, Vega Gull
PD69/211/1	7.50	VP	"Q"6
PD76/211/1	7.00	VP	Vega Gull
PD111/211/1	7.00	VP	Nighthawk
PD120/211/1	7.00	VP	Vega Gull
PD154/211/1	6.75	VP	Mew Gull
HERCULES 100			
CD35/356/2	13.00	VP	Halton
PD35/356/1 PD52/356/1	13.00	VP	Halifax C.VIII, Halton

Drawing No.	Diam. (ft.)	Pitch (ft.)	Aircraft
HERCULES 630-639 Inclusive			
CR39/456/1	13.25	VP	Bristol 170 Mk. 1, 2, 11
CR41/4B6/16 CR44/456/2 CR44/456/4 CR44/456/12	13.25	VP	Viking
CR67/456/2 CR67/456/4 PD31/446/1 PD43/446/1 to /3 inc.	13.25	VP	Bristol 170 Mk. 1, 2, 11
PD97/446/1 and /2 PD98/446/1 and /2	13.25	VP	Viking
PD108/446/1 and /2	12.25	VP	Solent
PD129/446/1 and /2	13.25	VP	Bristol 170 Mk. 1, 2, 11
HERCULES 672 and 673			
CR77/456/8 PD96/446/1 and /2	14.00	VP	Bristol 170 Mk. 21
HERCULES 734 and 735			
PD122/446/1 and /2	14.00	VP	Bristol 170 Mk. 31
HERCULES 763			
CD94/446/1 to /4 inc. CD133/446/1 and /2 CD166/446/1 to /4 inc. CD167/446/1 and /2	13.00	VP	Hermes 4
J.A.P. J.99			
6628 LA10	5.50	2.33	Aeronca 100
Z5280	5.33	2.39	Motor Tutor 29B
LEONIDES 501 and 502			
PD81/313/1 and /2 PD134/313/1 and /2 PD158/313/1 PD159/313/1	9.00	VP	Prince

Drawing No.	Diam. (ft.)	Pitch (ft.)	Aircraft
LYCOMING O-235			
76RM44	6.33	3.66	Super Cruiser
LYCOMING O-290-3			
Z5594	6.00	3.67	Auster IV and V
Z5600/2	6.50	3.48	
Z5602	6.50	3.19	
LYCOMING O-435-A			
FP413	6.33	4.84	Aerovan
HR731			
LYCOMING R680			
Blade 6135A-6	8.50	VP	Reliant
Hub 2B20			
LYNX IV C			
Y759/11	8.25	5.48	Tutor
MERLIN 55M			
R26/4F5/9	10.41	VP	Spitfire VB
MERLIN 66			
R12/4F5/4	10.75	VP	Spitfire T.8
MERLIN 500 and 502			
CA5/148.	13.00	VP	Lancastrian, York
CA5/159.			
CA5/172.			
CA5/173.			
CA5/186.			
PA5/148			
PA5/159			
PA5/172			
PA5/173			
MERLIN 621 and 623			
PD95/445/1	13.00	VP	Tudor
MERLIN 626 and 724			
Blade 6845A-0	13.08	VP	Canadair C.4
Hub 43D50			

Drawing No.	Diam. (ft.)	Pitch (ft.)	Aircraft
MONGOOSE IIIC			
B240	7.25	5.46	Tomtit
Y689/6	7.50	4.75	
Z5881	7.25	5.29	
Z5882	7.75	5.00	
NIAGARA II			
LA503	7.18	5.60	B.A. Swallow II
Z304	7.40	6.40	
Z1947	6.67	7.48	Scion Junior
Z2310/2	7.38	6.78	
Z2700	7.09	6.14	B.A. Swallow II
NIAGARA III			
LA503	7.18	5.60	B.A. Swallow II
Z2700	7.09	6.14	
Z5740	6.50	8.26	Comper Swift
PEGASUS VI			
228928/H/3	10.00	8.00	Walrus I
PEGASUS 38 and 48			
C5/46A	12.75	VP	Sandringham I, Sunderland III
C5/47			
P5/48			
PERSEUS XVI			
Blade P455253A-25	12.75	VP	DH.95
Hub PX502			
POBJOY R			
995/2/A	6.50	8.50	Comper Swift
Z271/1	6.50	8.52	
Z690	6.43	7.71	
Z5740	6.50	8.26	
PRAGA B			
15242/1	5.25	3.28	Hillson Praga
LA565	5.00	3.24	

Drawing No.	Diam. (ft.)	Pitch (ft.)	Aircraft
TWIN WASP S1C3G (R-1830-92)			
Blade 6153A-18 .. Hub 23E50-233 .. -391 .. Blade 6353A-18 .. Hub 23E50-287 .. -473 .. Blade 6477A-0 .. Hub 23E50-473 .. -505 ..	11.50	VP	Douglas C.47 (Dakota II and III)
TWIN WASP S3C4G (R1830-90C ; 90D)			
Blade 6353A-18 .. Hub 23E50-287 .. -473 ..	11.50	VP	Douglas C.47 (Dakota IV)
Blade 6477A-0 .. Hub 23E50-473 ..	11.50	VP	Douglas C.47 (Dakota IV)
CA5/158. . .. .. CA5/158D	12.00	VP	Sandringham V, VII
WALTER MIKRON II			
A66049/1X1	4.75	3.59	Tipsy Trainer
A66167/X4	5.50	3.44	Tipsy Trainer
A66167/X5	5.50	3.90	Tipsy B
B66592/X1	5.25	3.56	Tipsy Trainer
LA511	5.05	3.92	Tipsy Trainer
LA553/2	5.35	3.22	Tipsy Trainer
WARNER SUPER SCARAB 165			
86/CA/69	7.16	5.75	Fairchild F.24W
LA527	7.00	5.20	Fairchild F.24W
Z8040	6.66	5.56	Fairchild F.24W
WASP JUNIOR R985			
Blade 6167A-15. . .. Hub 2D-30-235 ..	8.25	VP	Expediter, Lockheed 12A, Traveller
Blade 6095A-6 .. .. Hub 2D-30	9.00	VP	Lockheed 12A
Blade 6101A-18. . .. Hub 2D30-237 ..	8.50	VP	Beaver
WASP MAJOR TSB3-G			
Blade 2J17B3-8W .. Hub 24260	16.50	VP	Boeing 377
Blade 1052-20C4-30 .. Hub C644S-B302 ..	16.66	VP	Boeing 377

AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 5

Issue 1.
14*th November*, 1945.

PAINTING AND MARKING OF CIVIL AIRCRAFT

1 Attention is drawn to the fact that the war-time regulations in respect of painting and marking of British civil aircraft have now, in general, been relaxed.

2 As a result of this relaxation, civil aircraft registered in the United Kingdom may now be painted any desired colour subject to compliance with the provisions of the Air Navigation (Consolidation) Order regarding the manner in which the nationality and registration marks are painted on or affixed to aircraft.

By order of the Board,

Secretary.

Brettenham House,
Strand,
London, W.C.2.

AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 6

Issue 12.
1*st July*, 1951.

BRITISH CIVIL AIRWORTHINESS REQUIREMENTS GENERAL INFORMATION

1 **Purpose** British Civil Airworthiness Requirements, hereinafter referred to as the "Requirements," are published by the Air Registration Board ; they comprise minimum requirements and constitute the basis on which recommendations to the Minister of Civil Aviation will be made.

2 **Layout**

2.1 The Requirements are presented in sections, each section having a prefix letter as follows :—

Section A — General Information and Procedure.
Section C — Engines and Propellers.
Section D — Aeroplanes.
Section E — Gliders.
Section G — Rotorcraft.
Section J — Electrical.
Section L — Licensing.
Section R — Radio.
Section Z — Definitions.

2.2 The Board is in process of revising the method of presentation and loose-leaf sub-sections are being superseded by bound sections. In this interim stage two methods of presentation are contained :—

2.2.1 **Bound Sections.** Each bound section is identified by the initial letter given to the subject (see paragraph 2.1), and is divided into sub-sections by subject ; each sub-section is further divided into chapters. Bound sections include their own CONTENTS list.

2.2.2 **Loose-leaf Sub-sections.** Each loose-leaf sub-section is identified by a reference number incorporating the section prefix letter, an issue number, and an issue date. This information is listed in the CONTENTS.

2.3 In both methods of presentation, material differences between issues will be marked by marginal lines.

3 **Effective Date** A requirement shall, unless a statement to the contrary is associated with it, come into force on the date of issue printed on the section cover or on the particular sub-section, as appropriate.

4 **Design Requirements** The design requirements are published in broad terms, leaving the designer free to choose the manner in which compliance with the requirements is achieved.

5 **Recommendations** Where necessary RECOMMENDATIONS have been appended. These are distinguished by blue printing and state acceptable interpretations of the Requirements.

6 **Interpretation** The Requirements, with or without explanatory matter, should not be regarded as constituting a text book of current aeronautical knowledge ; interpretation of the Requirements against a background of such knowledge is essential.

7 **Publication and Distribution**

7.1 The Requirements are purchasable at the following prices :

		Price (including postage)
A	Bound section	6s. 6d.
C	„ „	4s. 0d.
D	„ „	7s. 6d.
E	„ „	2s. 6d.
G	*Provisional issue only*	*5s. 0d.*
J	Bound section	3s. 0d.
L	„ „	1s. 0d.
R	„ „	2s. 6d.
Z	One loose-leaf sub-section	0s. 6d.
Folder	.. ..	11s. 6d.

7.2 With the exception of Sections **E** and **G**, a Licensed Aircraft Engineer may purchase one copy of each of the Requirements listed above, together with the folder, for £1 1s., post free.

7.3 The prices listed in paragraph 7.1 do not entitle purchasers to new issues of the sections, or sub-sections, but persons desirous of receiving them, as they are issued, may do so by opening a Deposit Account with the Board. This arrangement will only apply to purchasers of the complete volume, i.e. all the Requirements listed above (*except Section G*). The minimum amount for the Deposit, in addition to the initial cost of the Requirements, is £1 ; the cost of new or amended sections is deducted from this Deposit, as the sections are issued.

8 Issue and Amendment

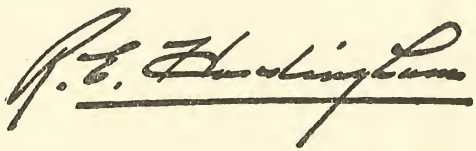
8.1 When new issues of sections are made this will be notified in the Aeronautical Press.

8.2 If, in exceptional cases, it is necessary to supplement or supersede any part of a published section, an announcement will also be made in the Aeronautical Press.

9 Applications and Enquiries Applications for Requirements, accompanied by the appropriate fee, should be addressed to Publications Department, Air Registration Board, Greville House, 37 Gratton Road, Cheltenham, Glos. All enquiries regarding the technical content of the Requirements should, however, be addressed to the Secretary, Air Registration Board, Brettenham House, Strand, London, W.C.2.

10 Cancellation This Notice cancels Notice to Licensed Aircraft Engineers and to Owners of Civil Aircraft No. 6, Issue 11, dated 1st January, 1951, which should be destroyed.

By Order of the Board,



Secretary.

Brettenham House,
Strand,
London, W.C.2.

AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 7

Issue 14.
1*st July*, 1951.

BRITISH CIVIL AIRWORTHINESS REQUIREMENTS

PARTICULARS OF SECTIONS AND SUB-SECTIONS ISSUED

1 The Sections and Sub-sections detailed below have been issued and may be obtained as described in Notice to Licensed Aircraft Engineers and to Owners of Civil Aircraft No. **6.**

2 **Cancellation** This Notice cancels Notice to Licensed Aircraft Engineers and to Owners of Civil Aircraft No. **7**, Issue 13, dated 1st January, 1951, which should be destroyed.

CONTENTS .. .. *Issue* 18 1*st July*, 1951

GENERAL FOREWORD .. .. .. *Issue* 14 1*st July*, 1951

SECTION A—GENERAL INFORMATION AND PROCEDURE .. .. .. *Issue* 1 1*st April*, 1950

Supplement comprising :—
Chapter A3—4 Radio Apparatus Issue 1, 1st April, 1951
Chapter A3—5 Aircraft Radio Stations Issue 1, 1st April, 1951

SECTION C—ENGINES AND PROPELLERS *Issue* 2 1*st January*, 1951

SECTION D—AEROPLANES .. .. *Issue* 2 1*st January*, 1951

SECTION E—GLIDERS .. .. .. *Issue* 1 1*st March*, 1948

SECTION J—ELECTRICAL .. .. *Issue* 1 1*st June*, 1948

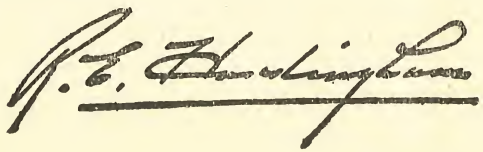
SECTION L—LICENSING.. .. .. *Issue* 2 1*st January*, 1949

SECTION R—RADIO .. .. .. *Issue* 1 1*st July*, 1951

Z.8 *Issue 1 1st June, 1947* DEFINITIONS—GENERAL ; STANDARD CLIMATIC CONDITIONS.

Recommendations Appendix Issue 1, 1*st June*, 1947.

By Order of the Board,



Secretary.

Brettenham House,
Strand,
London, W.C.2.

AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 8

Issue 2.
1st April, 1949.

RADIO APPARATUS INSTALLED IN CIVIL AIRCRAFT

1 The Air Navigation (Radio) Regulations, 1949, copies of which are now available at His Majesty's Stationery Office, will, as from 1st April, 1950, require all matters relating to the maintenance of radio apparatus installed in aircraft registered in the United Kingdom to be certified by aircraft radio maintenance engineers licensed by the Minister of Civil Aviation.

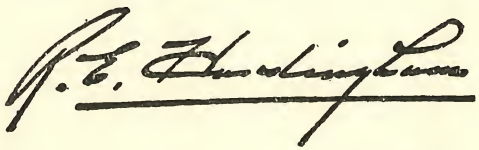
2 All enquiries regarding aircraft radio maintenance engineers' licences should be addressed to the Secretary, Ministry of Civil Aviation, Ariel House, Strand, London, W.C.2.

3 The introduction of aircraft radio maintenance engineers' licences will not affect the present duties of licensed aircraft maintenance engineers. In this connection it should be noted that these duties as detailed in Notice to Licensed Aircraft Engineers and to Owners of Civil Aircraft No. 3 include the certification of the security of attachment of radio apparatus to an aircraft structure ; they do not include the certification of the condition and functioning of those services used solely for radio apparatus.

4 In order to ensure the safety of aircraft and the efficiency of operation of all services concerned, co-operation between licensed aircraft maintenance engineers and licensed aircraft radio maintenance engineers will be essential at all times.

5 **Cancellation** This Notice cancels Notice to Licensed Aircraft Engineers and to Owners of Civil Aircraft No. 8, Issue 1, dated 14th November, 1945, which should be destroyed.

By Order of the Board,



Secretary.

Brettenham House,
Strand,
London, W.C.2.

AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 9

Issue 2.
14*th April*, 1949.

AIRCRAFT MAINTENANCE SCHEDULES AND CERTIFICATES OF SAFETY FOR FLIGHT

1 The Air Navigation Order, 1949, and Air Navigation (General) Regulations, 1949, copies of which can be obtained from His Majesty's Stationery Office, came into force on the 1st April, 1949.

2 The above mentioned Order prescribes *inter alia* that Certificates of Safety shall be issued in respect of an aircraft at such periods as may be laid down in the Approved Maintenance Schedule for that aircraft. The procedure to be followed for obtaining approval of aircraft maintenance schedules is given in Sub-section **A.18** of British Civil Airworthiness Requirements.

3 A Certificate of Safety issued in respect of an aircraft will cease to be in force :—

at the time when a new Certificate of Safety is required to be issued by the terms of the Maintenance Schedule *or*

if before expiry of the Certificate of Safety the aircraft sustains a serious defect, at the time at which such defect occurs.

NOTE. For the purpose of this notice the expression "serious defect" means such a defect as would not, in accordance with ordinary aeronautical practice, be remedied by the pilot or crew.

4 When a Certificate of Safety ceases to be in force as a result of a serious defect, a licensed aircraft engineer will be in order in issuing a new certificate provided :—

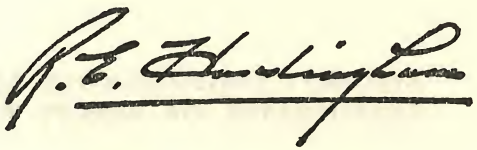
he is satisfied that the defect, and any consequential defects, have been remedied,

details of the defect or defects, and the action taken to remedy the defect or defects, have been recorded and duly certified,

he is satisfied, on the basis of the information provided by the operator, that, up to the time of the issue of such certificate, all maintenance and inspection required to be carried out in accordance with the approved maintenance schedules for the aircraft, have been so carried out.

5 **Cancellation** This Notice cancels Notice to Licensed Aircraft Engineers and to Owners of Civil Aircraft No. **9**, Issue 1, dated 14th February, 1946, which should be destroyed.

By Order of the Board,



Secretary.

Brettenham House,
Strand,
London, W.C.2.

AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 10

Issue 5.

1*st January*, 1951.

RATINGS OF CATEGORIES OF AIRCRAFT MAINTENANCE ENGINEERS' LICENCES

1 The experience and requirements for the grant, variation and renewal of an Aircraft Maintenance Engineer's Licence are prescribed in the current issue of Section L of British Civil Airworthiness Requirements, copies of which may be obtained from the Publications Department, Air Registration Board, Greville House, 37 Gratton Road, Cheltenham, Glos., at the cost of 1/- each, post free.

2 The United Kingdom concurs with the standards proposed by the International Civil Aviation Organisation (I.C.A.O.) for the experience required for the grant of the ratings in Class I, equivalent to Categories "B" and "D" of a United Kingdom licence, and Class II, equivalent to Categories "A" and "C" of a United Kingdom licence.

3 Attention is drawn to the fact that the licence must be used only to certify aircraft registered in the United Kingdom. It may be used to certify aircraft registered in another country only on the written authority of the country concerned.

4 A licence which has lapsed for more than two years cannot be considered for renewal without examination of the holder. Application should be made in accordance with the current procedure. The extent of the examination would be dependent on the nature of the employment of the holder since the licence expired, and the degree to which such duties could be considered as comparable to those for which the licence is endorsed.

Note.—A clear understanding of the licensing requirements depends on cross reference between this Notice and Section L; the Notice must therefore be read in conjunction with Section L, particularly in respect of the lists of aeroplanes and engines given in paragraphs 5 and 6.

5 Categories "A" and "B"—Aeroplanes

5.1 When a licence makes reference to this paragraph 5.1, the privileges of the licence may be exercised in respect of the following aeroplanes :—

B.A. and Klemm Swallow
Benes-Mraz BE-550
Benes-Mraz "Sokol" M-1C
Comper Swift
D.H. 60G
D.H. 83
D.H. 85
D.H. 87
D.H. 94
Hendy Heck
Heston Phoenix
Miles Falcon
Miles Hawk Major, Six, Trainer
Miles Martlet
Miles M.18
Miles M.28
Miles Messenger
Miles Monarch
Miles Night Hawk
Miles Sparrowhawk
Miles Whitney Straight
Moss MA.2
Newbury Eon
Percival Gull
Percival Proctor, Vega Gull
Tipsy Trainer
Wicko

5.2 When a licence makes reference to this paragraph 5.2, the privileges of the licence may be exercised in respect of the following aeroplanes :—

Aeronca C3, 100
Auster III, IV, V Series
Blackburn B.2
Cessna C.34
Chrislea C.H.3
D.H. 80
D.H. 82
Fairchild Argus
Hawker Tomtit
Hirtenberg HS. 9A
Piper Cub J3, J4
Piper Super Cruiser PA. 12
Stinson Reliant
Stinson Voyager
Taylorcraft Plus Models A, C, D
Taylor Cub J2

5.3 When a licence makes reference to this paragraph 5.3, the privileges of the licence may be exercised in respect of the following aeroplanes :—

Airspeed Consul, Oxford
Avro Anson
Avro XIX
Beechcraft Traveller
D.H. 84
D.H. 86
D.H. 89
D.H. 90
G.A.L. Cygnet
Globe Swift
Miles Aerovan
Miles Gemini
Percival Q.6
Short Scion Junior

5.4 When a licence makes reference to this paragraph 5.4, the privileges of the licence may be exercised in respect of the following aeroplanes :—

Avro Lancastrian	H.P. Halifax, Halton
Avro York	Lockheed 12
Bristol 170	Lockheed Constellation
D.H. 104	Short S.25
Douglas C.47, D.C.3	Vickers Viking
Fairey Fulmar II	Vickers Supermarine Spitfire

5.5 Reference will not be made to this paragraph 5.5 in licences, and the privileges of a licence can be exercised for the following aeroplanes only if the aeroplanes are specifically detailed in the licence.

Beechcraft Expediter D.H. C.1 Chipmunk D.H. C.2 Beaver	The experience requirements will be the same as those for the types listed in paragraph 5.3
Avro Tudor Boeing 377 Canadair C.4 Douglas C.54 H.P. Hermes 4 Miles Marathon Percival Prince Short S.45 Short Sealand	The experience requirements will be the same as those for the types listed in paragraph 5.4

6 Categories "C" and "D"—Engines

6.1 When a licence makes reference to this paragraph 6.1, the privileges of the licence may be exercised in respect of the following engines :—

Aeronca E113C, Jap	D.H. Gipsy Major
A.S. Civet (Genet Major)	D.H. Gipsy Six I (Queen III)
A.S. Mongoose	Lycoming 0-235 Series,
Blackburn Cirrus Minor	0-290 Series, 0-435 Series
Blackburn Cirrus Major	Pobjoy "R", Cataract, Niagara
Continental A40, A50, A65, A80	Salmson AD.9
C75/12, C125	Walter Mikron II
D.H. Gipsy I, II, III	Walter Minor 4-III
D.H. Gipsy Minor	Warner Super Scarab 40, 165

6.2 When a licence makes reference to this paragraph 6.2, the privileges of the licence may be exercised in respect of the following engines :—

A.S. Cheetah IX, X, XIX
D.H. Gipsy Six II (Queen II)
Lycoming R.680 Series

6.3 When a licence makes reference to this paragraph 6.3, the privileges of the licence may be exercised in respect of the following engines :—

A.S. Cheetah XV, XVII
Bristol Hercules
Bristol Pegasus
D.H. Gipsy Queen 70
Pratt & Whitney Wasp Junior R.985
Pratt & Whitney Twin Wasp R.1830
R.R. Merlin 30, 66, 500 Series, 600 Series
Wright Cyclone R.1820
Wright Duplex Cyclone R.3350

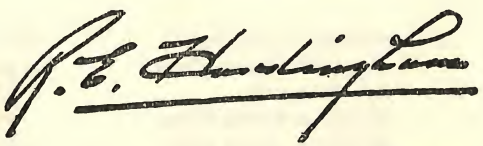
6.4 Reference will not be made to this paragraph 6.4 in licences, and the privileges of a licence can be exercised for the following engines only if the engines are specifically detailed in the licence.

D.H. Gipsy Major IIA——————The experience requirements will be the same as those for the types listed in paragraph 6.2

Alvis Leonides
Pratt & Whitney Twin Wasp R.2000
Pratt & Whitney Wasp Major R.4360
} The experience requirements will be the same as those for the types listed in paragraph 6.3

7 Cancellation This Notice cancels Notice to Licensed Aircraft Engineers and to Owners of Civil Aircraft No. **10**, Issue 4, dated 1st January, 1950, which should be destroyed.

By Order of the Board,



Secretary.

Brettenham House,
Strand,
London, W.C.2.

AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 11

Issue 2
1st February, 1947

CIRRUS MINOR SERIES II AERO ENGINE

1 Continual tightening of the bolts which secure propellers, manufactured by the Airscrew Company Limited, to the hubs of Cirrus Minor Series II engines has caused the outer laminations of the propellers to be crushed and penetrated by the 150 mm. diameter hub sleeve and front plate. In some cases this has also caused cracks to start in the edge joint of birch faced propellers.

2 So as to avoid the continual tightening of the bolts which is at present necessary, Blackburn Aircraft Limited have introduced Modifications Nos. 687, 688 and 689, to increase the diameter of the hub sleeve and front plate to 170 mm. and to reduce the length of the spinner.

3 Particulars of these modifications and the necessary parts may be obtained on application to Blackburn Aircraft Limited, Engine Department, Brough, East Yorks.

4 Before fitting the modified parts, it will be necessary to face off the front and rear laminations of propellers which have been damaged as described in paragraph 1 above.

5 If, after facing off to remove indentations on the boss faces, the distance between the boss faces is less than the minimum distance prescribed by the engine hub (viz.: 85 mm.), it will be necessary to fit a packing piece. In this case, application should be made to the Airscrew Company Limited, Weybridge, Surrey, for details of their reconditioning scheme which includes the fitting of birch ply packing pieces. When a packing piece is not required, the unprotected wood left after facing should be treated with one coat of wood filler to Specification BS.2X11, two coats of undercoating varnish to Specification BS.2X8 and one coat of finishing varnish to Specification BS.2X12.

6 Propellers with edge jointed birch outer laminations should be examined for cracks in the edge joint near the hub flange. If cracks are visible the propellers must be regarded as unserviceable and returned to the Airscrew Company Limited, Weybridge, for repair.

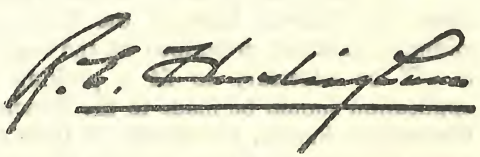
7 The design of propellers manufactured by firms other than the Airscrew Company Limited, may be such that unless complementary modifications to particular propellers are also introduced, it will not be possible to embody the modifications detailed in paragraph 2 above. In such cases, application for particulars of any modifications which may be necessary should be made to the manufacturer of the propeller concerned.

8 Propellers on which the indentation exceeds 1½ mm. (0·060 inches) in the case of mahogany outer laminations and 1 mm. (0·040 inches) in the case of birch outer laminations, should be modified immediately, but in all other cases the above modifications must be embodied not later than the 31st March, 1947. Certificates of Airworthiness of aeroplanes concerned will, in the event of failure by the owners to embody the modifications by that date, be liable to suspension or cancellation.

9 After these modifications have been embodied it should only be necessary to check the tightness of the bolts securing the propeller to the hub after the first flight, and thereafter at the periods quoted in the aircraft constructor's Handbook or approved Maintenance Schedule.

10 **Cancellation.** This Notice cancels Notice to Licensed Aircraft Engineers and to Owners of Civil Aircraft No. 11, Issue 1, dated 28th May, 1946, which should be destroyed.

By order of the Board,



for Secretary.

Brettenham House,
Strand,
London, W.C.2

AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 12

Issue 1.
28*th November*, 1946.

FLEXATEX C.6 HOSE

1 The attention of all concerned is drawn to the fact that "Flexatex" C.6 Hose is liable to shrink up to a maximum amount of 7%, and that this in some cases has resulted in the pipes pulling away from the end connections and in other cases in the distortion of tank shells.

2 All "Flexatex" C.6 Hose installed in aircraft must be examined immediately and thereafter weekly for any sign of pipes pulling away from end connections or distortion of tank shells.

3 All cases of pipes pulling away from end connections or distortion of tank shells must be reported to the Secretary of the Board at the address given below.

4 Where "Flexatex" C.6 Hose is already installed or where it can be installed with suitable bends to provide for the shrinkage of not less than 7% in length, without causing tension in the hose or its end fittings, no further action other than normal periodic inspection is necessary.

5 **Modification Action**

5.1 In cases where straight runs of hose prevent installation to provide for contraction in length, modification action is to be taken as soon as possible. Modifications on the following lines will accord with recommended practice :—

replace all affected hose by an approved type of hose not subject to shrinkage. In cases where such hose is metal armoured or wire wound, due regard should be paid to the requirements for electrical bonding of metallic components, *or*

replace all affected hose by light alloy pipes to Specification DTD.310 where these can be adequately supported and

suitably jointed with short lengths of hose to B.S.I. Specification 6F7. Electrical bonding must be provided for by using approved methods.

5.2 Provision should be made for the double clipping of all joints and for end fittings to have beaded ends. Beads or swaged ends should be ·020 ins. $^{+\cdot 002}_{-\cdot 000}$ ins. in depth by ·187 ins. in width. Sharp corners liable to cause abrasion of the tube inner member must be avoided.

6 Replacements in accordance with paragraph 5.1 constitute a modification and must be approved in accordance with the procedure detailed in Sub-section A.6 of British Civil Airworthiness Requirements. The owners of aircraft affected should apply to the manufacturers of such aircraft for details of any modification which may be necessary.

By Order of the Board,

T. E. Thomas

Secretary.

Brettenham House,
Strand,
London, W.C.2.

AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 13

Issue 3.
1*st January*, 1951.

PROPELLERS TO DRAWING Nos. A.66410 AND A.66460 FITTED TO "OXFORD" and "CONSUL" AIRCRAFT

1 Previous issues of this Notice have detailed the procedure for the inspection of the above types of propellers for cracks in the blades and in the phenolic boss blocks. This issue, in addition to repeating details of the action to be taken, draws attention to the fact that slight surface crazing and small cracks in the phenolic boss blocks do not necessarily render the blocks unserviceable.

1.1 A crack in the blade usually starts as a hairline extending from beneath the boss block on a line through the attachment bolt hole at the blade root, and parallel to the chord of the blade.

1.2 A crack in a boss block is usually in the region of the same bolt hole but in a radial direction.

2 Propellers of the above types must be inspected "in situ" and particular attention paid to :—

the sides and edges of the blades adjacent to the phenolic boss blocks, and

the visible surfaces of the phenolic boss blocks.

3 In addition, these propellers must be removed for a full strip examination of the blades and boss blocks at periods not exceeding each 100 hours flying.

4 In re-assembling the propeller, care must be taken to see that white datum lines on the boss blocks are in line, and that pairs of diametrically opposite bolts are tightened simultaneously.

5 **Propeller Blades** Propeller blades which are suspected of having developed fatigue cracks should be returned to the Fairey Aviation Company Limited, Hayes, Middlesex, for full examination before further use, and the defect should be reported to the Board.

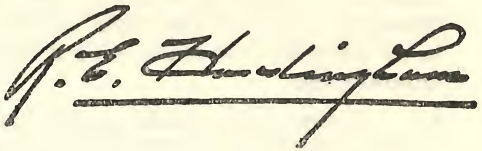
6 Phenolic Boss Blocks

6.1 A phenolic boss block in which slight surface crazing or small cracks have developed may continue in service at the discretion of an appropriately licensed aircraft maintenance engineer provided there are no signs of movement between the propeller hub, the propeller blades and the phenolic boss block.

6.2 When there is any doubt as to the serviceability of a block in which there is a crack or cracks, the block should be returned to the Fairey Aviation Company Limited, Hayes, Middlesex, for full examination before further use, and the defect should be reported to the Board.

7 Cancellation This Notice cancels Notice to Licensed Aircraft Engineers and to Owners of Civil Aircraft No. **13**, Issue 2, dated 20th November, 1947, which should be destroyed.

By Order of the Board,



Secretary.

Brettenham House,
Strand,
London, W.C.2.

AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 14

Issue 1.

14*th March*, 1947.

THE EFFECT OF HOAR FROST, SNOW AND ICE ON TAKE-OFF

1 As a result of a recent accident, it is necessary to draw the attention of all concerned to the dangers of the adherence of hoar frost, snow or ice to aerofoil surfaces, and to stress the vital importance of removing such deposits immediately prior to take-off.

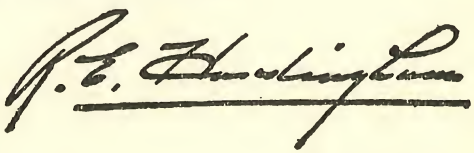
2 When an aircraft has been standing in the open overnight or even for a period during the day at low temperatures, a deposit of hoar frost may be formed. This deposit will affect the aerodynamic characteristics of the aircraft to such an extent as to increase the drag and stalling speed, and decrease the rate of climb.

3 It is not sufficient to remove any snow which may have fallen because any hoar frost underneath will still remain. Snow will also adhere to hoar frost and will not be completely blown off when the aircraft commences to take off.

4 Glaze ice is caused by supercooled rain falling on aircraft surfaces which are at a temperature below freezing point. It is not easily visible at a distance and may have the same effect as hoar frost.

5 The de-icing of control surfaces alone is insufficient as the presence of hoar frost or glaze ice on the main planes will be sufficient to affect the take off to a dangerous degree.

By order of the Board,



for Secretary.

Brettenham House,
Strand,
London, W.C.2.

AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 15

Issue 1.
14*th March*, 1947.

THE LOCKING OF A.G.S. AND SIMILAR TYPE PIPE COUPLINGS

1 In view of accidents attributable to the lack of adequate locking of A.G.S. and similar types of pipe couplings with wire, it has become necessary to reintroduce precautionary measures which, as a concession, were relaxed during the recent war.

2 After the 1st June, 1947, no recommendations will be made for the issue or renewal of Certificates of Airworthiness for any type of aircraft, unless all A.G.S. and similar types of pipe couplings situated **forward** of the fireproof bulkhead or bulkheads, are suitably locked with wire.

3 After the 1st June, 1947, no recommendations will be made for the issue or renewal of Certificates of Airworthiness for any type of aircraft, unless all A.G.S. and similar types of pipe couplings situated **aft** of the fireproof bulkhead or bulkheads have been secured to the satisfaction of the Board.

By order of the Board,

for Secretary.

Brettenham House,
Strand,
London, W.C.2.

AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 16

Issue 3.

1*st January*, 1953.

GOVERNMENT-SURPLUS AIRCRAFT ENGINES, PROPELLERS, INSTRUMENTS, EQUIPMENT AND SPARES

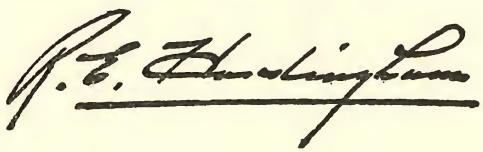
1 The attention of all concerned is drawn to the fact that Government-surplus engines, propellers, instruments, equipment and spares which are offered for sale may have become unserviceable after becoming redundant.

2 Unless the manufacturer of any Government-surplus engine, propeller or instrument which has been stored or unused for a period exceeding six months since manufacture or since the last complete overhaul prior to the date of purchase from ex-Government sources, is prepared to certify to the Board that a recent investigation has shown it to be in a serviceable condition, the engine, propeller or instrument must be completely dismantled, overhauled and tested before being fitted to a civil aircraft. This procedure must be followed in respect of engines, propellers and instruments already fitted to Government-surplus aircraft qualifying for Certificates of Airworthiness.

3 Owners of civil aircraft and licensed aircraft engineers are reminded that, before fitting any replacements from any source, they must ensure that the engine, propeller, instrument, item of equipment or spare has been previously certified by an appropriately licensed aircraft engineer or by an organisation approved by the Board for the purpose.

4 **Cancellation** This Notice cancels Notice to Licensed Aircraft Engineers and to Owners of Civil Aircraft No. 16, Issue 2, dated 17th September, 1952, which should be destroyed.

By Order of the Board,



Secretary.

Brettenham House,
Strand,
London, W.C.2.

AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 17

Issue 8.
1*st January*, 1951.

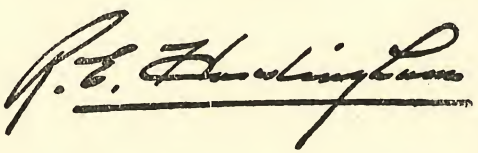
CERTIFICATES OF SAFETY

1 With reference to the proviso to sub-paragraph (b) of paragraph (2) of Article 15 of the Air Navigation Order, 1949, the Minister of Civil Aviation has given directions that a certificate of safety in respect of any aircraft registered in the United Kingdom which is outside the United Kingdom may be issued by the holder of an appropriate aircraft maintenance engineer's licence granted or rendered valid by the duly competent authority in Australia, the Bahamas, Canada, India, the Irish Republic, Kenya, New Zealand, Nyasaland, Pakistan, Southern Rhodesia, Northern Rhodesia, Tanganyika, Trinidad, Uganda, the Union of South Africa and Zanzibar.

2 Operators of public transport aircraft wishing to avail themselves of the advantages of these Directions are reminded that they must furnish such information as may be necessary to enable the engineers, who are to sign the certificates, to be satisfied that, up to the date of issue of such certificates, all maintenance and inspection required to be carried out in accordance with the approved Maintenance Schedules for the aircraft have been so carried out.

3 **Cancellation** This Notice cancels Notice to Licensed Aircraft Engineers and to Owners of Civil Aircraft No. **17**, Issue 7, dated 1st April, 1950, which should be destroyed.

By Order of the Board,



Secretary.

Brettenham House,
Strand,
London, W.C.2.

AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 18

Issue 1.
17*th June*, 1947.

CIRRUS ENGINES (MOULDED VERNIER COUPLINGS)

1 As a result of the failure of a number of magneto moulded Vernier couplings on Cirrus Major II and III engines, the material from which the couplings were made is being changed.

2 The couplings which have failed are easily identifiable in that they are coloured grey-green, whereas the new ones are coloured either white or off-white, or sap-green with the identification mark N.5.

3 All old type couplings must be replaced by the new type as soon as possible and in any case by the 31st July, 1947, at the latest. Certificates of Airworthiness of aeroplanes in which Cirrus Major II and III engines are installed will be liable to suspension or cancellation after that date unless this is done.

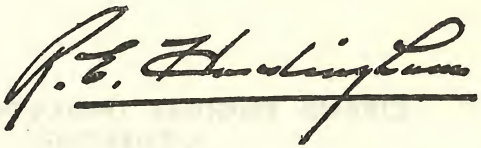
4 Until such time as the new type of couplings are fitted the old type must be examined before each flight for any signs of failure, particular attention being paid to signs of shearing on the outside diameter midway between the driving teeth.

5 There have also been two or three cases of couplings failing on Cirrus Minor II engines, but in these cases the failures were due to a defect in the engine itself.

6 In the event of couplings failing on Cirrus Minor II engines, they should not be replaced until a careful examination of the

interior of the engine has been made in order to determine the reason for the failure of the couplings. All cases must be reported to the Secretary of the Board.

By Order of the Board,



Secretary.

Brettenham House,
Strand,
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AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 19

Issue 3.
10*th November*, 1947.

WOODEN PROPELLERS TO DRAWING NUMBERS Z.6010 AND Z.6011

1 Investigation has disclosed that the defects which have developed in propellers to Drawing Numbers Z.6010 and Z.6011 when in service, are of such a nature that it is not possible to introduce a satisfactory modification. Replacement propellers are however undergoing tests and will be available in small quantities in the near future.

2 Propellers to Drawing Numbers Z.6010 and Z.6011 must be withdrawn from service as soon as possible and in any case not later than the 31st December, 1947. Certificates of Airworthiness for aircraft fitted with these propellers will be liable to suspension or cancellation, and licensed aircraft engineers must not issue Certificates of Safety in respect of such aircraft, after the 31st December, 1947.

3 Pending replacement, the following precautions must be observed before each flight in respect of propellers to Drawing Numbers Z.6010 and Z.6011 :—

3.1 Ensure that the bolts securing the propeller to the hub are tight.

3.2 If the bolts securing the propeller to the hub are loose, check the bolt holes for elongation and the propeller boss for cracks.

3.3 Ensure that there is no indication of movement of the leading edge metal sheathing.

3.4 Ensure that there is no increase in the gaps between the segments of the leading edge metal sheathing, particularly between the tip segment and the adjacent segment.

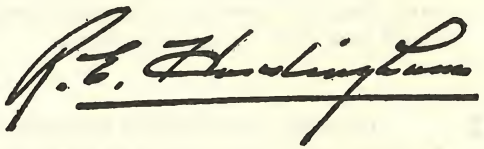
3.5 Ensure that the rivets securing the leading edge metal sheathing are not loose.

3.6 Ensure that the leading edge metal sheathing is not cracked, particularly across the rivet holes.

4 If any of the defects detailed in paragraphs 3.2 to 3.6 are apparent, the propellers must be withdrawn from service and details of the defects communicated to the Board.

5 **Cancellation** This Notice cancels Notice to Licensed Aircraft Engineers and to Owners of Civil Aircraft No. **19**, Issue 2, dated 14th October, 1947, which should be destroyed.

By Order of the Board,



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Brettenham House,
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AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 20

Issue 2.

3rd September, 1947.

T.K.S. DE-ICING SYSTEMS

1 Experience has shown that the use of T.K.S. H.70 Fluid in T.K.S. De-icing Systems has resulted in the corrosion of certain airframe parts with which the fluid has come into contact. It is therefore essential that the use of T.K.S. H.70 Fluid should be discontinued and this Notice introduces a scheme which will enable all concerned to implement this without delay.

2 T.K.S. R.328 Fluid has recently been approved and the Board strongly recommends that this should be used instead of T.K.S. H.70 Fluid.

3 As an alternative to T.K.S. R.328 Fluid, fluid to D.T.D. Specification 406A may be used, but it is strongly recommended that the two fluids are not mixed.

4 When changing over from T.K.S. H.70 Fluid to T.K.S. R.328 Fluid, or fluid to D.T.D. Specification 406A, the precautions outlined in paragraphs 5 and 6 below must be observed.

5 The system must, so far as practicable, be drained of T.K.S. H.70 Fluid and filled with T.K.S. R.328 Fluid, or fluid to D.T.D. Specification 406A. The pump should then be operated and a careful check made to ensure that a full and steady flow is obtained from all distributors. If the flow is spasmodic or nil from any distributor it is probable that the products of corrosion have partially or fully blocked the distributor, which should be removed, overhauled and re-fitted, and the flow check repeated.

NOTE : These precautions need not be observed when changing over from T.K.S. R.328 Fluid to fluid to D.T.D. Specification 406A, or vice versa.

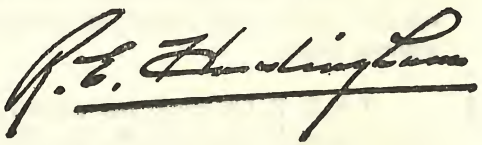
6 In order to ensure that there are no residual corrosive products, an external check for signs of corrosion must be made after each occasion on which the system is used. If there is any evidence of corrosion the distributor should be renewed ; alternatively, the system must be thoroughly flushed

through with water until the chemical analysis of the exuded water indicates a complete freedom from the products of corrosion. The flow tests detailed above should then be repeated.

7 The above procedure applies to T.K.S. systems in all aeroplanes, including those in which the de-icing system may never have been used.

8 **Cancellation.** This Notice cancels Notice to Licensed Aircraft Engineers and to Owners of Civil Aircraft No. 20, Issue 1, dated 15th July, 1947, which should be destroyed.

By order of the Board.



Secretary.

Brettenham House,
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AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 21

Issue 1.
1*st October*, 1947.

ASBESTOS LAGGED FLEXIBLE PIPES IN ENGINE BAYS

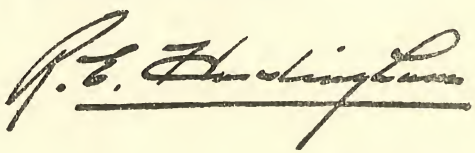
1 A contributory cause of recent fires in engine bays has been the saturation, by inflammable liquids, of the lagging of flexible pipes. The asbestos lagging is normally covered with a wrapping of Polyvinyl chloride tape or a sleeve of neoprene or rubber tubing.

2 The saturation has occurred as a result of damage to the wrapping or sleeve or inadequate sealing at the end fittings, and can be detected by blistering of the outer covering or by a "soggy" feel as distinct from the "hard" feel of unsaturated material.

3 In order to eliminate any possibility of fire from this cause, the lagging of all flexible pipes in engine bays must be examined, for any signs of damage to the wrapping or sleeve and for any signs of saturation, at the next equivalent to a 50 hour Maintenance Inspection or Check, and thereafter at periods not exceeding 50 hours flying.

4 Any pipes which are found to be defective must be replaced immediately, preferably by fireproof flexible pipes.

By Order of the Board,



Secretary.

Brettenham House,
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AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 22

Issue 1.
14*th October*, 1947.

CIRRUS MINOR SERIES II AERO ENGINES (CRANKSHAFTS)

1 In June, 1947, the Engine Division of Blackburn Aircraft Limited circulated a Service Instruction No. J.14, having reference to the inspection of crankshafts in Cirrus Minor Series II Aero Engines.

2 Of the 760 engines affected, only 643 have as yet been returned to the makers for inspection and it is not known what action, if any, has been taken in respect of the remaining 117 engines.

3 After the 31st December, 1947, Certificates of Airworthiness of aeroplanes in which Cirrus Minor Series II Aero engines are installed will not be renewed unless the inspection detailed in Service Instruction No. J.14 has been carried out.

By order of the Board,

Secretary.

Brettenham House,
Strand,
London, W.C.2.

AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 23

Issue 1.

24*th December*, 1947.

CIRRUS ENGINES (CONTROLS)

1 A case has been reported of a ball joint becoming detached from a spring loaded socket on ball and socket joint type EA.767/3, resulting in complete loss of power during flight.

2 Investigation has disclosed that it is possible for the ball joint to become detached when the adjusting pad is tightened up and then slackened off to the extent of $\frac{1}{2}$ to $\frac{3}{4}$ of a turn. It has also been disclosed that it is possible for the control rod to be screwed into the socket to such an extent as positively to lock the ball between the concave pads.

3 Before any further flying is attempted on any aircraft fitted with Cirrus Minor or Cirrus Major engines, the following precautions must be observed :—

3.1 Inspect all ball and socket joints type EA.767/3 and ensure that there is at least $\frac{1}{16}$in. clearance between the socket and the lever arm to which the threaded portion of the ball joint is attached.

3.2 Ensure that the control rods do not foul any adjacent structure or mechanism throughout their full range of movement.

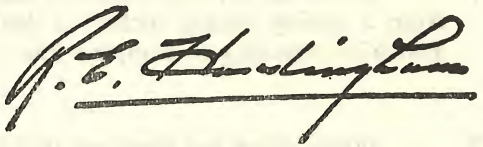
3.3 Ensure that the screwed end of the control rod is in safety in the socket, but does not protrude into the socket housing.

3.4 Ensure that the spring behind the inner concave pad in the socket is serviceable.

3.5 With the controls assembled, screw up the adjusting pad in each socket until the ball joint is clamped tight, then slacken off until the next split pin hole in the socket is in line with the slot in the adjustment pad. *Under no circumstances should the adjustment pad be slackened more than ¼ of a turn.* Lock in the approved manner with $\frac{1}{16}$in. split pin.

4 The precautions detailed in paragraph 3 must be repeated after each 50 hours flying.

By Order of the Board.



Secretary.

Brettenham House,
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AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 24

Issue 3.

1*st November*, 1949.

FIRE-EXTINGUISHER SYSTEMS

1 Previous issues of this Notice referred only to the testing of resistor sockets (Ref. 5C/3230). The Notice is extended in this issue to include details of another procedure which must be followed on certain Mark II fire-extinguisher bottles (Ref. 27N/14).

2 Fire-Extinguisher Bottles Mark II (Ref. 27N/14)

2.1 The terminal block was originally attached to these extinguisher bottles by means of two screws, but to improve moisture sealing, a four-screw terminal-block attachment was later introduced.

2.2 Although the two-screw terminal-block attachments are obsolete, some still remain in use and, as soon as convenient, but not later than 31st December, 1949, all fire-extinguisher bottles using this method of terminal-block attachment are to be withdrawn from service and replaced by modified bottles.

2.3 Details of a scheme for modifying bottles using a two-screw terminal-block attachment may be obtained from the Graviner Manufacturing Co. Ltd., Poyle Mill Works, Colnbrook, Bucks.

3 Resistor Sockets (Ref. 5C/3230)

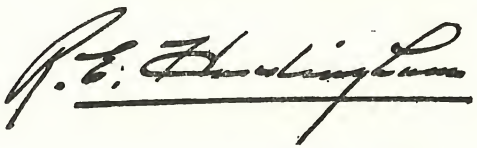
3.1 The internal resistor incorporated in these sockets should nominally be 22 ohms, but in defective sockets the resistance may be so high as to prevent the discharge of the extinguisher bottles in an emergency.

3.2 All resistor sockets in Graviner fire-extinguisher systems incorporating Marks I, II and VI extinguisher bottles should already have been tested in accordance with the terms of Issue 2 of this Notice. In future, all resistor sockets are to be tested on installation in an aircraft.

NOTE : A method of carrying out this test is to connect a 12 volt, 6 watt lamp (for a 24 volt system) or a 6 volt, 1·8 watt lamp (for a 12 volt system) across the socket, and, if the resistance is of the correct value, the lamp will light brightly.

4 **Cancellation** This Notice cancels Notice to Licensed Aircraft Engineers and to Owners of Civil Aircraft No. **24**, Issue 2, dated 17th February, 1948, which should be destroyed.

By Order of the Board,



Secretary.

Brettenham House,
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AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 25

Issue 1
12*th March*, 1948

GIPSY QUEEN SERIES 70 ENGINES

FAILURE OF PROPELLER OIL TRANSFER TUBE SEALS

1 Failures of the propeller oil transfer tube seals in Gipsy Queen Series 70 engines have recently occurred. Such failures result in a loss of propeller control.

2 One of the causes of failure of the transfer tube seals is considered to be due to "spinning" of the transfer tube, and in order to prevent this, Gipsy engine modification No. 1370, which provides a positive means of locking the propeller oil transfer tube assembly, has been introduced. This modification, together with Gipsy engine modification No. 1355 which introduces a re-dimensioned locating washer, is to be embodied at the earliest opportunity, and details recorded in engine log books.

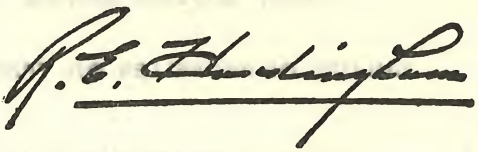
3 Pending the embodiment of Gipsy engine modifications 1355 and 1370, all propeller oil transfer tube assemblies, fitted in engines which have been run for 30 or more hours, are to be inspected immediately in accordance with the details given below. Any engines which have, at the date of this Notice, not completed 30 hours running may, if desired, be run until the period expires, but are then to be inspected. The inspection is to be repeated at intervals of not more than 30 hours running time on all unmodified engines.

3.1 Remove the reduction gear sub-assembly from the crankcase and unbolt the constant speed unit oil pipe elbow connections.

3.2 Inspect the transfer tube assemblies for damage to their locating washer or seals. Particular attention should be paid to the condition of the transfer ferrules in the sun gear which must be replaced if damaged.

NOTE.—It is essential that "feathering" and "unfeathering" checks are carried out following the inspections detailed above.

By Order of the Board.



Secretary.

Brettenham House,
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AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 26

Issue 2
24*th May*, 1948.

MILES GEMINI AND MESSENGER AIRCRAFT JAMMING OF RUDDER CONTROLS

1 Issue 1 of this Notice drew attention to the possibility of the rudder bar connecting strut (Part No. 3869446) fouling the first pilot's rudder controls as a result of the failure of the attachment bracket in which provision is made for the stowage of the interconnecting strut when not in use.

2 Miles Aircraft Limited have now introduced a modification (Miles Aircraft Modification 424) to strengthen the attachment of the stowage bracket. This modification must be embodied in all aircraft of the above types as soon as possible and in any case not later than the 31st August, 1948.

3 Pending the embodiment of Miles Aircraft Modification 424, the interconnecting strut between the two rudder bars is to be removed, and suitably stowed, on all occasions when passengers are carried other than for the purpose of dual instruction.

4 **Cancellation.** This Notice cancels Notice to Licensed Aircraft Engineers and to Owners of Civil Aircraft No. **26**, Issue 1, dated 1st April, 1948, which should be destroyed.

By Order of the Board

Secretary.

Brettenham House,
Strand,
London, W.C.2.

AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 27

Issue 2

24*th May*, 1948.

DE HAVILLAND FOUR-BLADED PROPELLERS FOR HERCULES ENGINES

1 Issue 1 of this Notice introduced the precautionary action to be taken as a result of a defect found on certain propellers fitted to Viking aircraft. Arising from the investigation by de Havilland Propellers Limited, into the cause of the spider failures, the following types are now suspected :—

PD29/446/1	PD43/446/2
PD31/446/1	PD66/446/1
PD34/446/1	CD21/446/1
PD43/446/1	CD44/446/1

2 The following action is therefore to be taken in respect of all the propeller types listed in paragraph **1** above :—

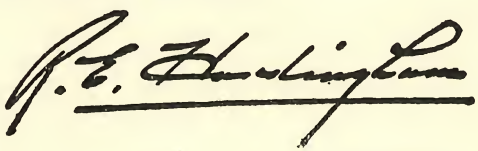
2.1 All spider assemblies which have completed 600 hours or more in service must be considered unserviceable ; in future the total life of all spiders of these types must not exceed 600 hours.

2.2 If undesirable vibration or severe oil leakage occurs prior to the completion of this period of 600 hours, the dome of the propeller should be removed and a careful inspection made of the internal bore of the spider assembly for any signs of fracture. If there are any signs of fracture the spider must be considered unserviceable.

3 Any cases of failure of the spider assembly of the above types of de Havilland propeller must be reported immediately to de Havilland Propellers Limited, Hatfield, Herts., and to the Board.

4 **Cancellation.** This Notice cancels Notice to Licensed Aircraft Engineers and to Owners of Civil Aircraft No. **27**, Issue 1, dated 8th April, 1948, which should be destroyed.

By Order of the Board



Secretary.

Brettenham House,
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AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 28

Issue 1.
14*th April*, 1948.

"AULIFF" LIFEBELTS

1 During recent tests some difficulty was experienced when operating the inflation mechanism of the "pierce seal" type of CO_2 bottle, an excessive amount of force being necessary to pierce the seal.

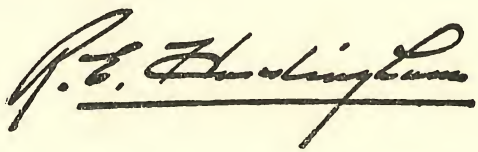
2 The force which must be applied to pierce the seal is related to the position of the lever operating the plunger, and tests have shown that the minimum of force is necessary when the lever has a free movement of between 30° and 45° before the plunger touches the seal.

3 The inflation mechanism, when fitted to a CO_2 bottle, should be lightly finger-tight only, when the free movement of the lever should be checked. If in this condition the free movement of the lever of a particular inflation mechanism/bottle combination is not between 30° and 45°, the correct movement may be achieved by selective assembly.

4 As from the date of this Notice no Auliff Lifebelt is to be considered serviceable unless the free movement of the operating lever before the plunger touches the seal is between 30° and 45°.

5 Instructions on the maintenance of Auliff Lifebelts may be obtained by purchasers of these lifebelts on application to W. Pound Ltd., 29/31, Dingley Place, City Road, London, E.C.1.

By Order of the Board,



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AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 29

Issue 1.
9th July, 1948.

ZENITH CARBURETTOR—TYPE 40 FAIHB
Fitted to Cirrus Minor Series II Aero Engines

1 A manufacturing error has been disclosed in the above type of carburettor ; this error has occurred in the blind untapped hole in the boss of the float chamber die casting. In some cases the depth of this hole exceeds the permissible limit.

2 The effect of this is that, where the permissible depth of the hole is exceeded, there is only a thin skin of metal left between the base of the hole and the float chamber, and this may collapse and cause a serious fuel leak.

3 Carburettors bearing the serial number 0824 and above have already been modified to rectify the error, but those bearing the serial number 0823 and below are suspect.

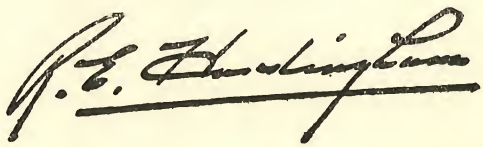
4 The depth of this blind untapped hole must be checked on all carburettors of the above type bearing the serial number 0823 or below, before the next flight of aircraft to which they are fitted.

4.1 Provided the depth of the hole does not exceed 12 mm. (twelve millimetres) no further action need be taken and the aircraft concerned may be flown.

4.2 If the depth of the hole exceeds 12 mm. (twelve millimetres) the aircraft concerned must not be flown until the modification described in Cirrus Service Instruction No. J.17 has been embodied.

5 Copies of Cirrus Service Instruction No. J.17 may be obtained on application to Blackburn Aircraft Ltd., Engine Division, Brough, E. Yorkshire.

By Order of the Board,



Secretary.

Brettenham House,
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AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 30

Issue 3.
1*st April*, 1950.

BLADE-RETAINING NUT AND BARREL FAILURES — DE HAVILLAND 4-BLADED PROPELLERS FOR HERCULES ENGINES

1 Previous issues of this Notice have detailed the action to be taken as a result of cracks occurring in blade-retaining nuts and barrels on propellers fitted to Viking aircraft. Similar cracks have since been found on propellers fitted to Bristol 170 Mark 21 aircraft, and this issue of the Notice now includes the action which must be taken as a result of an investigation of these failures.

2 **Viking Propeller Types PD29/446/1, PD29/446/2, PD29/446/3, PD34/446/1, PD34/446/2 and PD34/446/3.**

2.1 **Propeller Barrels which have completed 800 hours flying.** The blade-retaining nuts must be inspected for cracks by an approved method of magnetic crack detection.

2.1.1 Should the inspection reveal no cracks, the nuts may be returned for further service, and the inspection repeated every 200 hours.

2.1.2 Should the inspection reveal cracks, the nuts must be replaced by serviceable nuts and the inspection repeated every 200 hours.

2.2 **Propeller Barrels which have completed 1,200 hours flying.** The propeller barrels and blade-retaining nuts must be withdrawn from service.

3 **Bristol 170 Mark 21 Propeller Types PD66/446/1 and PD66/446/2.** For propeller barrels which have completed

1,400 hours flying, the propeller barrels and the blade-retaining nuts must, subject to the following proviso, be withdrawn from service.

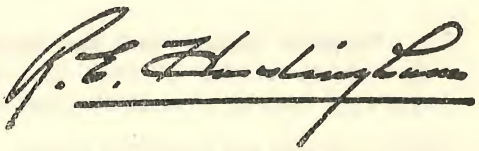
Proviso. If replacements are not immediately available, and provided the barrel and nuts have not exceeded 1,600 hours flying, they may continue in service for a further 200 hours flying. During this period the barrel arms must, pending the availability of replacements, be subjected to visual inspection for circumferential cracks at periods not exceeding 10 hours flying.

4 **Bristol 170 (other than Mark 21) Propeller Types PD31/446/1, PD43/446/1 and PD43/446/3.** No cases of failure have been reported or suspected on these types but, if undesirable vibrations occur, visual inspection of the barrel arms for circumferential cracks should be made.

5 **General** Any cases of failure of blade-retaining nuts or barrel arms must be reported immediately to de Havilland Propellers Limited, Hatfield, Hertfordshire, and to the Board.

6 **Cancellation** This Notice cancels Notice to Licensed Aircraft Engineers and to Owners of Civil Aircraft No. 30, Issue 2, dated 24th January, 1949, which should be destroyed.

By Order of the Board,



Secretary.

Brettenham House,
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AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 31

Issue 1.
14*th April*, 1949.

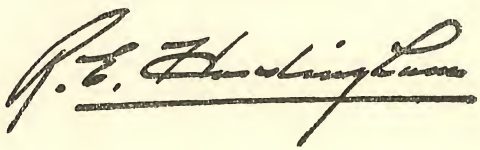
DE HAVILLAND 4-BLADED PROPELLER TYPES CD & PD27/445/1 or 2 and CD & PD54/445/1 or 2

1 As from 30th April, 1949, the above-mentioned propeller types must be withdrawn from service. The type numbers, and all references to them, will be deleted when Notice to Licensed Aircraft Engineers and to Owners of Civil Aircraft No. 4 is re-issued.

2 The propellers withdrawn from service may be replaced by any of the following types :—

CD & PD78/445/1 or 2
CD & PD79/445/1
CD & PD88/445/1
CD & PD89/445/1

By Order of the Board,



Secretary.

Brettenham House,
Strand,
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AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 32

Issue 1.
21*st July*, 1949.

RADIO STATIONS IN RELATION TO THE ISSUE AND RENEWAL OF CERTIFICATES OF AIRWORTHINESS

1 The grant and renewal of approval of a radio station in an aircraft is so closely related to the issue or renewal of the certificate of airworthiness of the aircraft in which the radio station is installed, that the two must be regarded as inseparable.

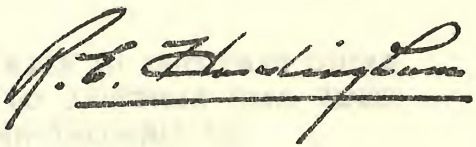
2 Radio stations should be air-tested at the same time as the aircraft concerned is flight-tested. This may result in aircraft flying beyond the ten nautical miles specified in Regulation 12 of the Air Navigation (General) Regulations, 1949, and to authorise such flights, the Minister of Civil Aviation gave the following Direction on 7th July, 1949.

"1 In pursuance of Article 70 of the Air Navigation Order, 1949, the Minister of Civil Aviation hereby gives authority for any aircraft flown within the United Kingdom in accordance with the provisions of paragraph (2) (b) of Article 10 of the said Order subject to the "A" Conditions specified in Regulation 12 of the Air Navigation (General) Regulations, 1949, for the purpose of testing the radio apparatus installed in the aircraft to be exempted from compliance with Condition (iv) of the said "A" Conditions in so far as such exemption may be necessary to enable the aircraft to be flown to and within the vicinity of the radio testing station suitable for the carrying out of the said tests which is nearest to the place of departure.

2 The authority hereby given shall have effect until revoked by the Minister of Civil Aviation."

3 The attention of all concerned is drawn to the fact that certificates of airworthiness will not be handed over to applicants until the Board has received reports to the effect that both the aircraft and the radio station have been satisfactorily tested.

By Order of the Board,



Secretary.

Brettenham House,
Strand,
London, W.C.2.

AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 33

Issue 1.

1*st September*, 1949.

PROVISION OF BATTERY MASTER SWITCH

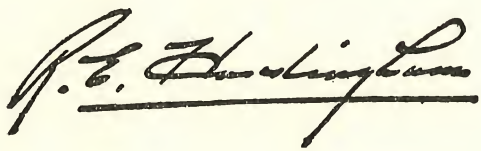
1 Minor fires have occurred in aircraft after take-off due to starting motors burning out and electrical cables becoming over-heated as a result of starter relay contacts jamming, a defect which may not be apparent prior to take-off. Although a battery master switch will not eliminate a defect of this nature, it will enable a pilot to isolate the battery and thereby reduce the risk of a serious fire.

2 As soon as convenient, but not later than 31st December, 1949, a master switch isolating the battery must be fitted to all aircraft having unprotected electrical circuits, including unprotected starter circuits, which may be connected to the battery in flight.

3 Owners of aircraft should apply to the manufacturers of the aircraft concerned for particulars of a scheme to incorporate a battery master switch. Where the manufacturers do not provide a scheme, owners should prepare their own schemes and submit them to the Board for approval.

4 After 31st December, 1949, Certificates of Airworthiness will not be issued or renewed, and Licensed Aircraft Engineers must not issue Certificates of Safety, in respect of any aircraft fitted with unprotected electrical circuits, including unprotected starter circuits, which may be connected to the battery in flight, unless a master battery switch is fitted.

By Order of the Board,



Secretary.

Brettenham House,
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AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 34

Issue 3.
13*th March*, 1950.

PROCTOR IV AND PROCTOR V AIRCRAFT

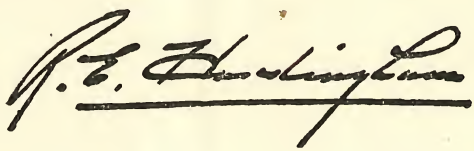
1 As a result of an investigation into the cause of structural failures in the air of two Proctor aircraft, Percival Aircraft Limited have introduced Modification No. C.1225 to reinforce the spars of the centre planes of all Proctor IV and Proctor V aircraft, and prepared Civil Technical Instruction No. 2 describing in detail the method of ascertaining the condition of glued joints in laminated spar booms of the mainplanes.

2 As soon as convenient, but in any case not later than 31st March, 1950, Modification No. C.1225 must be embodied and laminated spar booms must be inspected in accordance with Civil Technical Instruction No. 2.

3 As from the date of this Notice certificates of airworthiness will not be issued or renewed for Proctor IV and V aircraft, and, after 31st March, 1950, licensed aircraft engineers must not issue certificates of safety in respect of such aircraft, unless the aircraft have been modified and inspected as outlined in paragraph **2**.

4 **Cancellation** This Notice cancels Notice to Licensed Aircraft Engineers and Owners of Civil Aircraft No. **34**, Issue 2, dated 25th January, 1950, which should be destroyed.

By Order of the Board,



Secretary.

Brettenham House,
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AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 35

Issue 1.

1*st November*, 1949.

ELECTRIC CABLE TERMINAL LUGS

1 There have been numerous failures on soldered-type tubular copper spade lugs of the larger sizes (64 amps and over). The types mainly affected are 5H/37, 38 and 39 (AS. 2693, 2694 and 2695) and failure takes the form of partial or complete fracture across the palm of the lug close to the shoulder.

1.1 Although these types of lugs are obsolescent, large numbers are still in use, and in order to check incipient failure, all heavy duty cable connections must be inspected immediately.

1.2 Any lugs showing signs of cracking, or of weakness or distortion which can lead to cracking, must be replaced immediately. Particular attention must be paid to cable connections on accessories mounted on the engine or engine bulkhead, feathering pump motors, earthing points and batteries.

2 Since lack of proper support has been the chief contributory cause of lug failures, it is particularly important that electric cables are firmly supported close to terminals. Early action must, therefore, be taken to provide support to all cables of 60 amps rating and over, so that movement of the cable relative to the lug cannot occur within a distance of 6 inches from the lug (measured along the cable). Where this cannot be achieved in respect of the types of lugs detailed in paragraph 1, the lugs must be replaced as soon as convenient, but not later than 31st March, 1950, by the cast type, reference numbers 5C/850, 851 and 1901 (AGS. 1703, 1704 and 1706).

AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 37

Issue 1.
27th November, 1951.

SIEBE GORMAN SAFETY BELTS

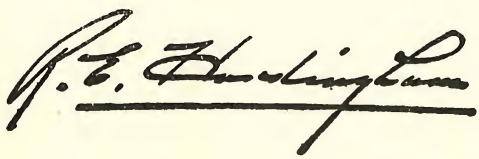
1 After the application of heavy loading on the above type of safety belt, it has been found that the buckle lever will pull down flat on to the webbing. In this position it is difficult to obtain sufficient purchase with the finger tips to apply the necessary release loads. To avoid the risk of serious difficulty in undoing these belts in emergency conditions, a modification to the buckle is essential.

2 Users wishing to apply their own modification schemes should make application to the Board. Alternatively, kits for an approved modification, complete with drawings, or drawings only from which the necessary parts can be manufactured locally, can be obtained on application to Siebe, Gorman & Co. Ltd., Davis Road, Tolworth, Surrey.

3 All safety belts released by Siebe, Gorman & Co. Ltd., prior to 1st January, 1952 (and not having the figures 37 stamped on them), must be modified as soon as possible, and in any case not later than 31st May, 1952. Licensed aircraft engineers must not issue certificates of safety in respect of aircraft fitted with unmodified belts after 31st May, 1952.

4 When modified, the buckles of all belts must be stamped with the figures 37.

By Order of the Board,



Secretary.

Brettenham House,
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AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 38

Issue 1.

1*st July*, 1952.

PLAIN WASHERS—SIZES

1 Many of the existing ranges of A.G.S. and A.S. plain washers are being superseded by washers to a range of British Standards Specifications. These washers are smaller in outside diameter than the original type and while they are satisfactory when used as facing or packing washers, they may not be satisfactory when used as retaining washers.

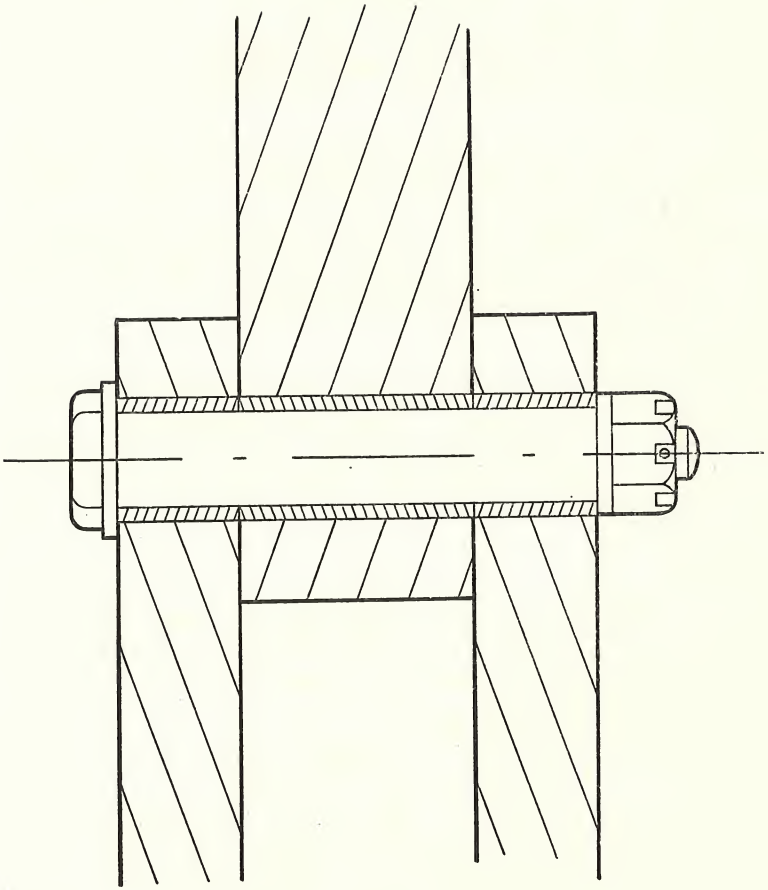
2 The drawing overleaf shows a joint fitted with plain bushes, in which a B.S.S. washer, Type SP 13G, has replaced the A.G.S. washer, Type 160E, originally fitted. The reduction in outside diameter is 0·150″ and, because of this, the complete assembly of bolt, bushes, washer and nut could be withdrawn from the joint as a whole.

3 The attention of all concerned is therefore drawn to the importance of checking the suitability of washers when assembling new components or fitting replacement washers on existing components.

By Order of the Board,

Secretary.

Brettenham House,
Strand,
London, W.C.2.



AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 39

Issue 1.

15*th September*, 1952.

R.F.D. LIFE-JACKETS

1 **CO_2 Assembly** All R.F.D. life-jackets of types prior to the Type 50 are fitted with "break neck" type CO_2 bottles. Unless these bottles are assembled in accordance with the manufacturer's instructions, which specify that a minimum of $\frac{1}{8}$" of threaded copper neck must be left clear of the holder, the jackets cannot be inflated. The following inspection is therefore to be made forthwith.

1.1 Remove the CO_2 assembly from the jacket and check the clearance between the bottle-neck and holder, as illustrated in Figure 1, overleaf.

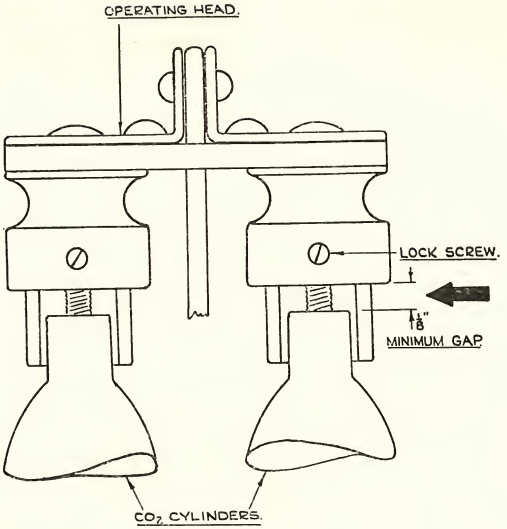
1.2 Check that the lock screw is only sufficiently tight to prevent rotation of the bottle.

2 **Mouth Inflation Assembly** The Type 47 Mark 2 has a metal mouthpiece which is locked by means of a knurled collar. To facilitate the use of this assembly the following action is to be taken forthwith.

2.1 Tighten the knurled collar down fully to the position shown in Figure 2, overleaf.

2.2 As a temporary measure amend the printed instructions (using a copper-free ink) on the label alongside the mouth inflation assembly so that they appear as follows :—

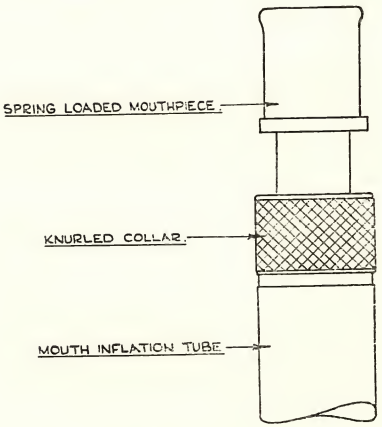
FOR TOPPING UP
[redacted] PUSH DOWN
VALVE WITH MOUTH
[redacted]



TYPE. 47 LIFEJACKET.

NOTE: TYPE 45 LIFEJACKET HAS A SINGLE CYLINDER WITH A MODIFIED OPERATING HEAD.

FIGURE 1



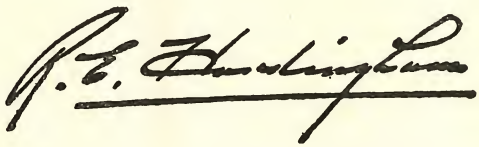
TYPE. 47 LIFEJACKET. MK. 2.
MOUTH INFLATION ASSEMBLY.

FIGURE 2

3 **Permanent Modification Action** After taking the action outlined in paragraphs **1** and **2**, application must be made to the manufacturers for detailed instructions and labels for the permanent modification of Type 45 and 47 life-jackets, together with the latest issue of their maintenance instructions. The address is as follows :—

R.F.D. Company Ltd.,
Catteshall Lane,
Godalming, Surrey.

By Order of the Board,



Secretary.

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AIR REGISTRATION BOARD

NOTICE TO LICENSED AIRCRAFT ENGINEERS AND TO OWNERS OF CIVIL AIRCRAFT

No. 40

Issue 1.

1*st January*, 1953.

CARBON MONOXIDE CONTAMINATION IN AUSTER AIRCRAFT

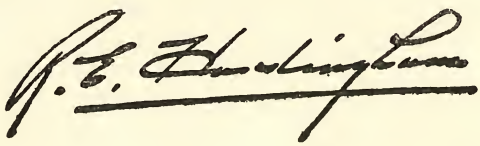
1 Operators of Auster aircraft modified for the use of cameras, long range belly tanks, etc., are warned of the possibility of dangerous carbon monoxide concentrations in the cabin.

2 The results of contamination tests on a variety of installations have proved them to be satisfactory but it has been shown that, in one instance (an Auster 5 fitted with a Lycoming engine, short exhausts, long range belly tank and oblique and vertical camera ports), an unacceptable amount of carbon monoxide was present in the cabin when the windows were closed.

3 There are many different combinations of exhaust systems, long range fuel tanks and camera openings and the problem is also complicated by the fact that varying conditions of flight considerably affect the amount of carbon monoxide which may be drawn into the cabin. In these circumstances the Board is unable to prescribe any general corrective action for camera installations already approved. Operators must therefore warn pilots to increase the ventilation if exhaust fumes are smelt.

4 Before further camera modifications are approved an aircraft of each design must be tested in varying conditions to ensure that the cabin is free from unacceptable concentrations of carbon monoxide. No further aircraft may be modified in accordance with the already approved installations unless the modifications are checked by similar tests to the Board's satisfaction.

By Order of the Board,



Secretary.

Brettenham House,
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